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Standards Applicable to Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities Under RCRA, Subtitle C, Section 3004 Finanncial Requirements (40 CFR 264 and 265 Subpart H): Final and Reproposed Regulations

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This document is one of a series providing support for regulations issued by the U.S. Environmental Protection Agency (EPA) under Subtitle C of the Resource Conservation and Recovery Act (RCRA). The regulations represent the initial effort for nationwide control of hazardous waste from point of generation, through transportation, treatment, and storage, to point of ultimate disposal.

This document covers standards applicable to hazardous waste mangement facilities with "Interim Status"--that is, they were in existence on November 19, 1980 (the effective date of the regulations), have notified EPA of their activities, and have applied for a permit, which has not yet been processed.

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B A C K G R O U N D   D O C U M E N T

STANDARDS APPLICABLE TO OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES UNDER RCRA, SUBTITLE C, SECTION 3004

Financial Requirements
(40 CFR 264 and 265, Subpart H)

This document (ms 1941.11) provides background information and support for EPA's hazardous waste regulations

U.S. ENVIRONMENTAL PROTECTION AGENCY
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FOREWORD

This Background Document accompanies regulations (40 CFR Parts 264 and 265, Subpart H) that set forth financial requirements applicable to owners and operators of hazardous waste treatment, storage and disposal facilities.

The purpose of the document is to explain why EPA developed the regulations and why they are written as they are. In so doing, EPA addresses (1) the Congressional mandate for regulations, (2) the need for the regulations, (3) precedents set by State and Federal regulations, and (4) the many public comments on the reproposed version of these regulations which was published in the Federal Register on May 19, 1980 (45 FR 32260-78), and (5) the rationale for specific provisions of the final regulations. Comments on the original proposal of December 18, 1978 (43 FR 58995, 59006-7), were addressed in the Background Document and Preamble to the reproposal and are not discussed in detail here. One part of the original proposal, liability requirements to be used as permit standards, was not included as part of the reproposal but the comment period for it was reopened. Comments received during the latter comment period on these liability requirements are addressed in this Background Document.

The Background Document is in two parts. Part One addresses financial assurance for closure and post-closure care and all other provisions except liability coverage. Part Two addresses requirements for liability coverage.

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PART ONE. FINANCIAL ASSURANCE FOR CLOSURE AND POST-CLOSURE CARE

I. INTRODUCTION

Financial responsibility requirements for owners and operators of hazardous waste treatment, storage, and disposal facilities constitute Subpart H of Parts 264 and 265 (Chapter 40, Code of Federal Regulations). Part 264 contains facility standards that will be used in the permitting process. Part 265 contains standards that apply to owners and operators with "interim status", i.e., they have notified EPA as required by Section 3010 of the Resource Conservation and Recovery Act, properly applied for a permit, and are awaiting final administrative action on their permit applications.

Under the Subpart H regulations of both Parts 264 and 265, an owner or operator of each treatment, storage, or disposal facility must establish financial assurance for its closure. For a disposal facility, the owner or operator must also provide financial assurance for post-closure care. Financial assurance may be provided through use of one or more of several mechanisms allowed--trust funds, surety bonds, letters of credit, equivalent mechanisms required by the State, or guarantees by the State. (Three mechanisms that were proposed, the financial test, a guarantee based on the financial test, and a revenue test for municipalities, are not allowed but are still under consideration by the Agency.) The level of financial assurance must keep up with cost estimates for closure and post-closure care that the owner or operator must prepare. The cost estimates must be based on closure and post-closure plans required by Subpart G. When a change in the plans affects the cost of closure or post-closure care, the cost estimates must be revised. The cost estimates must also be adjusted annually for inflation.

On May 19, 1980, EPA promulgated the first regulations to go into Parts 264 and 265. The Part 265 regulations included Subpart H (45 FR 33243), which set requirements for estimating the costs of closure and post-closure care. Subpart H also exempted the State and the Federal government from the requirements of the Subpart. The effective date of the cost-estimating regulations was postponed from November 19, 1980, to May 19, 1981, by an amendment issued October 30, 1980 (45 FR 72040).

The regulations that this Background Document accompanies establish Subpart H, Part 264, for the first time and add to Subpart H, Part 265.

The development of these regulations has been greatly influenced by public comments received on two sets of proposals. The first, issued December 18, 1978 (43 FR 58995, 59006-7), allowed only trust funds as the means of assuring availability of funds for closure and post-closure care. The closure trust fund had to be established in a lump sum. The post-closure fund could build over the life of the facility up to 20 years. The amounts to be assured were to be estimated by the owner or operator on the basis of the plans required to be prepared for closure and post-closure care of the facility. The financial assurance provisions were essentially the same for both interim status and general standards.

Many of the commenters on this original proposal said that the up-front closure trust fund was so costly that it would put them out of business. Commenters also said other financial mechanisms besides trusts should be allowed.

EPA reanalyzed these and other issues and developed a new proposal which was published May 19, 1980 (45 FR 33260-78). The lump-sum feature of the closure trust fund was replaced with a 20-year pay-in period because EPA was concerned that some firms would go out of business if they had to establish a paid-up fund and that this might contribute to a capacity shortfall in hazardous waste management. Alternatives to trust funds were allowed: surety bonds, letters of credit, a financial test, guarantees of the closure and post-closure obligations of one entity by another entity which met the financial test, a revenue test for municipalities, and State guarantees of performance or funding. Also, if a State required specific financial assurance mechanisms for closure and post-closure care, the owner or operator could use such mechanisms to meet the Federal requirements as long as the State mechanisms were substantially equivalent to EPA's mechanisms. Much of this Background Document is devoted to addressing the numerous comments the Agency received on this reproposal.

These regulations are closely tied to the closure and post-closure plans required in the Subpart G regulations (Closure and Post-Closure). It will not be possible to fully understand the financial responsibility regulations or this background document without a basic understanding of the function and content of the closure and post-closure plans. (The reader is referred to the background document entitled "Closure and Post-Closure Care.")

The following chapters on the rationale for the regulation and the analysis of comments cover the financial assurance requirements of both Parts 264 (general standards) and 265 (interim status standards). There are a few differences between the financial requirements of the two parts: (1) Part 264 includes provisions that state when owners and operators of new facilities must establish financial assurance mechanisms

(60 days prior to first receipt of hazardous waste for treatment, storage, or disposal). Part 265 applies only to existing facilities and becomes effective 6 months after promulgation. (2) Under Part 264, trust funds must be paid up over the term of the initial permit (a maximum of 10 years). Under Part 265, trust funds for existing facilities are allowed to build at a rate of 5 percent a year; if these facilities receive permits, the balance of the trust funds must be paid in over the term of the initial permit. (3) The financial assurance mechanisms allowed in Part 264 include two kinds of surety bonds--performance bonds and financial guarantee bonds, whereas only financial guarantee bonds are allowed in Part 265. (4) The length of the post-closure period for which financial assurance for post-closure care must be established is 30 years in Part 265; in Part 264 the post-closure period is the number of years required at the time of permitting. The reasons for the different provisions are explained in Chapter IV, Analysis of Comments and Rationale for Final Standards.

Key Definitions

When used in these regulations and the Background Document, the following definitions apply:

"Compliance procedure" means any proceedings instituted pursuant to RCRA or regulations issued under authority of RCRA which seeks to require compliance or which is in the nature of an enforcement action or an action to cure a violation. A compliance procedure includes a compliance order or notice of intention to terminate a permit or interim status pursuant to Section 3008 of RCRA or Part 124 of this Chapter, or an application in the United States district court for appropriate relief pursuant to Sections 3008, 7002, or 7003 of RCRA. For the purposes of this Subpart, a compliance procedure is considered to be pending from the time an order or notice of intent to terminate is issued or judicial proceedings are begun until the Regional Administrator notifies the owner or operator in writing that the violation has been corrected or that the procedure has been withdrawn or discontinued.

"Standby trust fund" means a trust fund which must be established by an owner or operator who obtains a letter of credit or surety bond as specified in these regulations. The institution issuing the letter of credit or surety bond will deposit into the standby trust fund any drawings by the Regional Administrator on the credit or bond.

II. RATIONALE FOR REGULATION

A. EPA Authority and Basis for Regulation

Section 3004 of Subtitle C of the Resource Conservation and Recovery Act (RCRA) of 1976 (P.L. 94-580) requires that the Environmental Protection Agency promulgate regulations establishing such performance standards applicable to owners and operators of facilities for the treatment, storage, or disposal of hazardous waste identified or listed under this Subtitle, as may be necessary to protect human health and the environment. Section 3004(6) states that these standards shall include requirements respecting " . . . the maintenance of operation of such facilities and requiring such additional qualifications as to ownership, continuity of operation, . . . and financial responsibility as may be necessary or desirable . . . ."

The Agency believes that compliance with its statutory mandate necessitates regulations that will assure protection of human health and the environment from potential adverse effects due to improper closure or lack of post-closure care as a result of an owner or operator not having adequate financial resources.

Congressional intent that financial responsibility requirements should be applied to the long-term care needs as well as the active operation of hazardous waste facilities is indicated in the Senate report accompanying the bill, the Solid Waste Utilization Act of 1976, which was the Senate version of what was to become RCRA. The Senate Public Works Committee report noted in describing the bill:

> One of the specific conditions . . . is the requirement that facilities providing treatment, disposal, or storage of hazardous wastes meet minimum qualifications on ownership, financial responsibility, and continuity of operations. In a situation where the best accepted method of dealing with a hazardous waste may be long-term stabilized storage, a permit must contain provisions to assure that the storage site will be maintained over that period. In addition, there must be adequate evidence of financial responsibility, not only for the operation of the site, but also to provide against any liability if the material escapes the storage.[1]

In the past it has been common practice to abandon or cease operations at hazardous waste management facilities with little or no effort made to close or secure them in such a way as to minimize potential adverse effects on human health or the environment. Seldom was any monitoring or maintenance work carried out after closure of disposal sites. The reasons for this failure in environmental and health protection are probably several: lack of understanding of the potential problems and how to prevent or minimize them; lack of legally enforceable closure and post-closure requirements; and, most specific to our concern here, lack of funds to pay for proper closure and post-closure care. Furthermore, as the instances of "midnight dumping" make clear, there are also those who would deliberately and illegally avoid the responsibilities connected with disposal of hazardous waste.

Today, there is available a large and increasing body of knowledge about potential health and environmental problems and how to prevent or minimize adverse effects. Requirements for closure and post-closure activities are set forth in Subpart G and other provisions of Parts 264 and 265. The financial requirements address the problem of owners or operators arriving at the point of closure with inadequate financial resources to pay for proper closure and post-closure care. As illustrated by cases discussed in this document, necessary closure and post-closure activities have not been undertaken or have been delayed or disrupted as a result of the failure of owners or operators to make funds available for closure and post-closure activities. Furthermore, society often has had to bear the costs of these activities because owners or operators did not have the funds to perform them.

The risk of failure of owners or operators to provide for closure and post-closure activities is increased by the fact that these activities begin when a facility has ceased to be an economic asset, at least as a place where treatment, storage, or disposal services are performed. Post-closure care will be needed at most disposal sites for decades; over such a period some companies will fail, suffer severe economic reverses, or disappear for any of a number of reasons.

EPA has concluded that, at a minimum, financial responsibility standards for closure and post-closure care, and for liability coverage as discussed in Part Two of this Background Document, are necessary and desirable. Other needs in financial responsibility related to hazardous waste management are addressed by the recently passed "Superfund" law, the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, P.L. 96-510 (December 11, 1980).

In its financial assurance regulations the Agency is requiring an owner or operator to estimate the costs of closure and of post-closure care and to provide for financial assurance in the amount of the estimates. The estimates will be based on individual closure and post-closure plans as required by Subpart G. The amounts of the closure estimates, for example, will be affected by the types and amounts of wastes managed, by the extent of the land disposal area to be closed, the number of monitoring wells required, whether leachate collection and treatment are required, the size of the inventory of wastes that will need to be removed from a treatment or storage facility, the steps necessary in decommissioning and decontaminating equipment, etc. The estimates thus directly reflect what is required for closure and post-closure care of the particular facility in order to protect human health and the environment. The Agency believes that one or more of the financial assurance mechanisms specified in the regulation will be available to any owner or operator who has the means to provide for closure and post-closure care. Neither in the required amount of funds nor in the required means of demonstrating financial assurance, therefore, can the regulation be considered an arbitrary preclusion of owners or operators.

B. Damage Cases

Many of the cases in the Agency's files of damage to health and the environment from improper hazardous waste management have involved problems of inadequate closure and post-closure care. In the eight cases summarized below, closure and/or post-closure care was not provided for in a timely manner by the responsible parties. When problems were discovered by the local community and funds were needed, the parties had gone out of business, had vanished, simply did not have enough money, or disclaimed responsibility because they were no longer the current owners of the site. The cases also illustrate other problems of hazardous waste management involving high cleanup costs, which should be greatly reduced in the future when the regulatory program is fully established, e.g., massive contamination of ground waters and streams due to poor siting and operation of the facility.

Proper closure and post-closure care entail costs, but these measures will help to prevent various other costs, including avoidance costs, direct damage costs, indirect damage costs, administrative costs, and environmental costs. Examples of such costs appear in the damage cases. Avoidance costs are those incurred in mitigating the threat from hazardous wastes at a facility that has not been closed properly or maintained adequately after closure, including building berms or dikes or stabilizing the movement of leachate in ground water by pumping ground water upgradient from normal flow. Direct damage costs include out-of-pocket expenses such as replacing a well supply or medical expenses. Indirect damage costs range from inconvenience while the water supply is interrupted to the anguish suffered from birth defects. Administrative costs include the expense of determining the extent of contamination, plans for remedial action, and supervision of the implementation of those plans. Finally, environmental costs, or degradation of natural resources, include the contamination of soil, air, surface water, and ground water. By ensuring availability of funds for carrying out closure and post-closure requirements, the financial responsibility requirements should prevent such costs caused by the unavailability of funds for adequate closure and post-closure care.

The following cases illustrate the need for the existence of adequate and secure financial resources to provide for closure and post-closure care.

At Love Canal the failure to contain toxic wastes has severely affected the physical, psychological, and economic well-being of families in the surrounding area. One aspect of the problem was the lack of adequate monitoring and maintenance after the Hooker Chemical Company ceased disposal operations at the Canal in 1953. The site was sold to the city, then to the school board, then to a developer, and finally to the residents. No financial or other provisions were made to assure that the migration of toxic chemicals would be watched for and prevented. It has been estimated that if site decontamination measures such as those described in the study, Analysis of Groundwater Contamination Incident in Niagara Falls, New York, had been undertaken in 1953, and the site had been properly monitored and maintained, the total cost for the years from 1953 to 1978 would have been about $3 million.[2,3] In contrast, $36 million in State and Federal funds has already been committed for cleanup and for evacuation of families, and damage claims totaling over $14 billion have been filed.[4]

In Stringfellow, California, a hazardous waste disposal site established in 1957 by a quarry company ceased operations in 1972 as a result of objections raised by the California Water Quality Control Board. Toxic contaminants were being dispersed in the ground water via leachate and through surface runoff. The Water Quality Board took over the site in 1975. The cost of cleanup will range from about $5 to $8 million, depending on whether chemical fixation is used on the remaining liquid and sediments; annual maintenance and monitoring costs are estimated at $36,000. On March 5, 1980, the Regional Response Team determined that Stringfellow was leaching to the Santa Ana River, and in imminent danger of major structural failure. A total of $290,000 was spent over 10 days to remove 4 million gallons of wastewater, reinforce containments, and repair the access road. Leachate was controlled, and there were no major discharges. Since no funds were set aside by management to assure that closure and post-closure monitoring and maintenance would take place, the public must bear the total cost. The Regional Board has been granted $370,000 from State funds for remedial action.[5]

In Elizabeth, New Jersey, approximately 35 to 40 thousand drums of toxic, explosive, corrosive, and flammable chemical wastes have been sitting on a 4-acre site. A chemical firm was licensed by the State to incinerate and neutralize certain hazardous wastes, until its operation was shut down by court order in January 1979. The estimated costs for cleanup of the site are now set at $10 million. The State Department of Environmental Protection has taken the Chemical Control Corporation to court in hopes of obtaining some money from either its parent company or from its officers. The company was subsequently placed in receivership. Chemical companies that consigned their wastes to the firm have been asked to reclaim them, but only 20 to 30 percent of the containers are traceable; the rest may have to be disposed of by the State. While the legal and financial processes are worked out, the facility continues to be a serious hazard to the surrounding area.[5]

Near Byron, Illinois, a salvage yard was established in 1970 over a 10-acre site and was run as a family operation. Toxic wastes were dumped or buried with and without containers, resulting in the contamination of surface water and ground water. The family who ran the operation has no funds for site closure. Up to $625,000 in public funds will be needed to close the site safely. The family had also used an adjacent 5-acre area for dumping and burial of wastes. This area, however, was purchased in 1973 by Commonwealth Edison who proceeded to contract for removal of wastes, other remedial measures, and a program to monitor surface and ground waters at a total cost of over $250,000.[5]

In Gary, Indiana, two facilities were established by the same owner to accept general industrial wastes. Both operations were managed improperly, resulting in surface and ground water contamination. The owner subsequently vanished, leaving at both sites the debris of fires and explosions. The costs to cleanup the sites could run up to $6 million. Since the owner has disappeared and no funds were set aside for closure or post-closure monitoring or maintenance, the public could end up paying a substantial portion of both the cleanup costs and the costs associated with proper closure and post-closure monitoring and maintenance.[5]

In Portage County, Ohio, an incinerator at an industrial waste treatment and disposal facility ceased operating in 1976. The facility currently has no method of disposing of the liquid industrial wastes it has on hand. However, in October 1979 the State of Ohio appropriated $1 million for various containment measures at the site including dike construction, grading, and carbon filtration to treat recovered pond water. The estimated cost to close the facility properly could exceed $1.8 million. The State is working with the owner to cover this cost.[5]

In Grand Prairie, Texas, an industrial waste treatment facility was shut down in 1978 by the Texas Department of Water Resources for environmental violations. The facility includes: the remains of an incinerator which burned up during a fire, acid and alkali recovery basins with a "homemade" fiberglass liner, waste oil basins excavated out of surficial clay deposits, a clay-lined chemical landfill containing chromium sludge, a variety of storage tanks and processing areas, and a number of containers of chemicals. The owner declared bankruptcy and the court awarded $28,000 to the State to help fund surface containment. The State is left with the remaining costs. A full cleanup and closure program which would address the ground water contamination problem is estimated to cost $90,000. Monitoring costs are estimated at $1,200 per year.[5]

In St. Louis Park, Minnesota, between 1917 and 1972, a company producing and applying creosote operated on an 8-acre site. Creosote wastes were discharged into open trenches on the property. In the early 1970's complaints were filed against the company by the Minnesota Pollution Control Agency (MPCA), and the plant ceased operating in 1972. At the same time, part of the property was being considered for redevelopment by the city of St. Louis Park. The Company transferred ownership of the property to the city, which in turn agreed to accept responsibility for any legal action which the State of Minnesota might bring relative to the site. Tests have since shown widespread contamination. According to the MPCA, the company contributed nothing to the investigation or cleanup of the site. The city and State have spent in excess of $500,000 for containment, ground water monitoring and pollution studies, and the city has incurred costs of about $1,800,000 for various remedial measures including well closures and for road construction on the site. Total cleanup costs are estimated at $20 to $200 million. If financial provisions for proper closure and post-closure care had been made and transferred to the city, the extent of damage could have been dramatically reduced.[6]

These cases are presented in greater detail in the compilation, Hazardous Waste Damage Cases, which covers a small portion of the hundreds of damage incidents that have been reported.[7] In the future the financial standards, by assuring implementation of closure and post-closure requirements, should contribute significantly to reduction of damages at hazardous waste facilities.

C. Federal, State, and Local Precedents

In gathering information to use in developing financial requirements, EPA examined Federal, State and local requirements that have purposes similar to that of the closure and post-closure financial requirements. Review of these requirements provides not only precedents for the RCRA regulations but also alternative regulatory scenarios and helps ensure that all types of financial instruments which might be appropriate are considered. In a few cases, information about experience in implementing these programs was valuable in pointing out the strengths and weaknesses of the various alternatives. The following is a summary of regulations which the Agency examined:

1. Federal Maritime Commission Regulations

Under Section 311 of the Clean Water Act, the Federal Maritime Commission has issued regulations "whereby vessel operators can demonstrate that they are financially able to meet their liability to the United States resulting from the discharge of oil or hazardous substances" into waters over which the United States has jurisdiction (46 CFR §542.1(b)). The regulations require vessel operators to select a financial mechanism approved by the FMC to ensure that they will be able to meet potential obligations arising from spills.

These regulations are similar to other FMC regulations implementing two other statutes involving financial responsibilities for water pollution. They allow the following mechanisms for meeting the financial responsibility requirement: (1) insurance, (2) surety bonds, (3) self-insurance, based on maintaining specified levels of net worth and working capital (each in the amount of $150 per gross ton of the largest vessel to be self-insured or $250,000, whichever is greater), (4) a guarantee, where the guarantor meets the specifications for self-insurance, and (5) other evidence of financial responsibility. In practice, no method other than the first four has been accepted by the Agency.

There are significant differences between the EPA's regulatory task and the FMC's, since the FMC is requiring operators to assure payment to the United States for cleanup in case of spills, while the EPA is requiring owners or operators to assure financial responsibility for operations that must be carried out. Spills may or may not happen, while carrying out required closure and post-closure functions should be a normal part of operations.

Some FMC regulations concerning financial responsibility for water pollution have been in effect since 1971. The FMC has advised us that by far the most frequently used mechanism is insurance, followed by self-insurance, the guarantee, and surety bonds. To determine threshhold eligibility of surety companies the FMC uses the U.S. Treasury list of surety companies (Circular 570).[8]

According to the FMC, their financial responsibility program has had no major problems. About 50 percent of the payments are from insurance companies and 50 percent from sureties, self-insurers, and guarantors. These percentages are roughly proportional to the numbers of vessels using these types of mechanisms. The amount of time it takes for a payment to be made varies widely. Some payments are immediate while others can drag through the courts for years. The latter situation however, has been very rare. It has generally been most difficult to collect from self-insurers because they are giving up their own working capital. The revolving fund authorized by Section 311 of the Clean Water Act covers payment delays, "mystery spills," and spills that cost more to clean up than can be legally collected under liability limits set by the regulations. The fund is financed through appropriations and payments.

The FMC has found that the mechanisms easiest to administer are those for which the agency has standard forms--insurance and surety bonds. Self-insurers and guarantors become eligible by demonstrating net worth and working capital requirements on yearly balance sheets and auditors' statements which must be checked by the FMC.

There has been only one bankruptcy of a self-insured firm. In its submissions to the FMC prior to bankruptcy the company had solidly qualified as a self-insurer under the passenger vessel regulation. Although no passengers lost any money, had there been injuries the firm may not have had enough liquidity to pay claims.

2. Federal Surface Mining Regulations

The U.S. Department of the Interior issued regulations (30 CFR 800-809) in March 1979 under authority of the Surface Mining Control and Reclamation Act of 1977, requiring that surface coal mining companies obtain a performance bond as certification that the mining activities will be conducted in accordance with certain performance standards. Performance bonds as defined in these regulations include: surety bonds; collateral bonds; escrow accounts; self-bonds; or a combination of the above. Collateral bonds may be supported by: cash; certain negotiable bonds; certificates of deposit; irrevocable letters of credit; or a mortgage or security interest in property, granted to the regulatory authority, equal in value to the bond obligation. Companies may establish a self-bond if they can demonstrate a history of financial solvency and continuous operation for 10 years, grant a mortgage or security interest to the regulatory authority, and meet other requirements. A study is being conducted on self-bonding; it is scheduled to be ready in early 1981.

The Department issued amendments on August 6, 1980. The permanent regulations are scheduled to become effective January 3, 1981. At present, interim programs are being operated by States. From comments by the Office of Surface Mining[9] and surety representatives[10] it seems clear that strip mine operators have had difficulty obtaining performance bonds to comply with the State programs, mainly because they are for periods longer than is traditional for surety bonds.

EPA's financial requirements allow trust funds, bonds, and letters of credit. The Agency is considering addition of a financial test, which would be roughly comparable to self-bonding without the contractual involvement between the operator and the regulatory agency. Collateral and security interests are not included since EPA does not have authority to directly receive and utilize funds for the purposes of assuring closure and post-closure care. Furthermore such methods appear to be administratively burdensome, as described below under "Other Mechanisms Reviewed." Escrow accounts are not included for reasons given in the same section.

3. Uranium Mill Licensing Requirements

Pursuant to the Uranium Mill Tailings Radiation Control Act of 1978, the Nuclear Regulatory Commission has issued licensing requirements for uranium and thorium milling activities which include requirements for financial assurance for proper decontamination and tailings reclamation (October 3, 1980, 10 CFR 40, Appendix A). The Commission determined that surety bonds, cash deposits, certificates of deposit, deposits of government securities, and irrevocable letters or lines of credit provide adequate public protection against an operator's default with no great administrative burden. The Commission will also consider allowing other mechanisms on a case-by-case basis.

The regulations also provide for long-term funding to finance the care and monitoring required at sites after execution of the mill operator's decommissioning responsibilities and termination of the license. After closure, title to the property is transferred to the State or Federal agency which will perform the long-term monitoring. The long-term fund would ensure that the operator provides enough financing for this work to be carried out. Until termination of the operator's license, the amount of the long-term fund must be included in the mechanism established for assuring decommissioning. The full charge is then paid to the governmental agency upon termination of the license. The fund will cover costs of monitoring. The Commission expects that virtually the only cost incurred will be for the time and effort of government inspectors who visit the site.[11]

EPA's financial requirements allow surety bonds and letters of credit and allow deposit of cash, certificates of deposit, and marketable securities in trust funds. As noted earlier, EPA cannot directly manage funds for financial assurance of closure and post-closure without specific legislative authority.

4. U.S. Coast Guard

Under the Outer Continental Shelf Lands Act Amendments of 1978, the Coast Guard has issued regulations requiring coverage of liabilities that may result from oil spills (49 CFR Part 135). The law allows the same methods as those in the FMC programs except for "other evidence of financial responsibility."

5. State Precedents

Thirteen States have financial requirements for closure and post-closure care of hazardous waste facilities. The programs vary considerably from State to State. Four State programs are summarized below; this is followed by a chart which lists all 13 States and the status of their programs.

Kansas requires hazardous waste management facility owners or operators to submit a closure and post-closure plan. The regulations specify closure and post-closure responsibilities. Owners and operators are responsible for care of a site for 10 years after closure. The State may, however, extend the care period as necessary to protect public health and the environment. Kansas requires a trust fund or performance bond to assure facility closure and monitoring. The amount of financial coverage which the owner or operator must obtain is specified by the State in the permit. In lieu of a trust or surety bond, the State will accept a deposit by the owner or operator of cash or U.S. Treasury notes with the State Treasury or an escrow agent deemed satisfactory by the State. The State may allow the owner or operator to build the required financial coverage over the life of the site. The State also has the authority to require an owner or operator to increase the amount of coverage if it appears inadequate.[12] A 1979 amendment to the Kansas Solid Waste Management Act set up a statewide fund that will pay for additional care and/or monitoring at a site after the owner or operator's responsibility has ended. The fund will also pay the costs of repairing a site or repairing environmental damage caused by a site as a result of a post-closure occurrence not anticipated in the plan of operation.[13]

Maryland requires the owner or operator to demonstrate evidence of financial ability to provide closure and post-closure care at a hazardous waste management facility. The owner or operator must obtain a surety bond, or deposit with the State a certificate of deposit, cash, or negotiable government bonds, in an amount specified by the State, or transfer ownership or operation of the site to the State prior to closure. If an owner or operator chooses to obtain a surety bond, the amount of the bond is set by the State in an amount to cover any costs for monitoring, maintaining and closing a facility, ensuring the security of a facility after its closure, and guaranteeing fulfillment of all permit requirements. The minimum amount of the bond is $10,000.

The Maryland bond obligates the surety to assure compliance with all applicable statutes, regulations, and permit conditions as well as the costs of closure, post-closure monitoring and maintenance, and any "corrective or restorative" action required by the State. Conceptually, the Maryland bond can be differentiated into a "performance" component and into an "environmental impairment" component.[14]

Oregon requires the owner or operator to submit a closure and post-closure plan as part of a facility permit application. The State reviews each plan and estimates closure and post-closure costs from the plan. Oregon has not developed specific cost estimation procedures as there is only one disposal site located in the State. Oregon requires an owner or operator to obtain a cash bond in the name of the State to cover closure and post-closure costs. A cash bond is a surety bond which is gradually replaced by cash over time. Before Oregon will issue a permit to an owner or operator, the owner or operator must deed to the State all portions of his disposal site in or upon which hazardous waste will be deposited.[15]

Wisconsin requires the owner or operator to submit a closure and post-closure plan with facility permit applications. An estimate of costs must accompany the plan. The State allows the owner or operator to obtain surety bonds, trust funds, escrow accounts and/or certificates of deposit as evidence of financial ability to provide proper closure and post-closure care. The owner or operator must set aside all funds necessary to close his facility before he may begin facility operations. Payments may be made into the post-closure fund at regular intervals during the life of the site. The owner or operator is responsible for long-term care of his site for either 20 or 30 years after closure. After that, the State assumes responsibility. The State Waste Management Fund is used to pay for costs of long-term care of a site occurring after the owner's or operator's responsibility has ended. The Waste Management Fund is supported by fees collected from facility owners or operators.

The regulations did not go into effect until March 1980 so there has been little implementation experience. The State foresees two major problems: first, difficulty in setting aside the money up front for the entire closure and, second, availability of bonds to municipalities.

Wisconsin also has a Hazardous Substances Spill Fund which is funded through appropriations. The monies can be used to clean up abandoned or inactive sites.[16]

The chart lists States which have financial requirements in their regulations. Some are still pending because the State is waiting to see what EPA's final regulations will be like. In Minnesota they are waiting until establishment of a hazardous waste facility is actually proposed. Many of the programs have just begun and are still being worked on.

6. Other Precedents

Many local governments require the use of various financial instruments by their contractors to assure financial responsibility. For example, in Virginia, Fairfax County's Department of Public Utilities has allowed its contractors to post escrow accounts, letters of credit, and surety bonds. The escrow account is held by the County and is the most frequently used instrument.[17]

The perpetual care of cemeteries is generally assured by trust funds. The State of Virginia, for example, requires that a cemetery corporation start with a minimum initial deposit of $25,000 in a perpetual endowment fund. With the sale of each lot, a minimum of 10 percent of the sale must go into this fund. The interest from this fund provides for maintenance, security, and perpetual care.[18]

STATE REQUIREMENTS FOR FINANCIAL RESPONSIBILITY FOR CLOSURE AND POST-CLOSURE CARE, AUGUST 1980

State	Financial Requirements for Closure	Financial Requirements for Post-closure	Types of Financial Mechanisms	Years of Regulatory Experience	Closure Plan Requirement	Cost Estimates Procedures
California	Yes	Yes	Bond Monetary Reserve Fund	0	Yes	Yes
Kansas	Yes	Yes	Bonds Trusts	2	Yes	No
Kentucky	Yes	Yes	Letter of credit Escrow	0	Yes	No
			Trust Fund Surety Fund			
Louisiana	Yes	Yes	Bonds Trust Financial Test	1/2	Yes	No
Maryland	Yes	Yes (transfer to State)	Bonds Financial Test	2	No	Yes
Michigan	Yes	Yes	(Pending)	0	No	No
Minnesota	Yes	Yes	(Pending)	0	Yes	No
Oklahoma	Yes	Yes	Bonds	1	Yes	No
Ohio	(Pending)				No	No
Oregon	Yes	Deed to State	Cash Bond		Yes	No
Texas	Yes	Yes	Bonds Trust Escrow Letter of Credit	3	No	Yes
Washington	Yes (For extremely Hazardous Wastes)	Yes	Bond	0	No	No
Wisconsin	Yes	Yes	Bonds Trust Escrow	0	Yes	Yes

References for Chapter II

1. *Solid Waste Utilization Act of 1976. Report of the Committee on Public Works together with Individual* Views to Accompany §3622. Senate Report 94-988, 94th Congress, 2d Sess., 1976, p.16.

2. Information on Love Canal case in Office of Solid Waste file of damage cases. U.S. Environmental Protection Agency, Washington, D.C.

3. *Analysis of Groundwater Contamination Incident in Niagara Falls, New York.* Report prepared under contract for Office of Solid Waste, U.S. Environmental Protection Agency by Fred C. Hart Associates, Inc., New York, N.Y., July 28, 1978.

4. Memorandum dated April 28, 1980, from Kenneth Feldman of EPA to the public docket for the financial requirements regulations, reporting telephone conversations with (1) Norman Nosenchuck of the New York State Department of Environmental Conservation on April 4, 1980, regarding costs of remedial actions and (2) with attorney Richard Berger of Grossman, Levine and Civiletto of Niagara Falls, New York, on April 15, 1980, and with attorney Richard Lippes of Moriarty, Allen, Lippes, and Hoffman of Buffalo, New York, on April 28, 1980, regarding claims for damages.

5. "Status of State Hazardous Waste Management Programs and Summary Reports on Sites/Incidents Involving Hazardous Waste Management". Compilation of Information, mainly from EPA Regional Offices, for use of Office of Solid Waste U.S. Environmental Protection Agency, 1979.

6. Information on St. Louis Park case in Office of Solid Waste file of damage cases. U.S. Environmental Protection Agency, Washington, D.C.

7. "Hazardous Waste Damage Cases". A compilation. Office of Solid Waste, U.S. Environmental Protection Agency. Unpublished Report. April 1980.

8. Memorandums on meetings between Federal Maritime Commission staff and EPA staff on financial responsibility requirements, November 16, 1979, March 7, 1980, and August 14, 1980.

9. Memorandum on meeting between EPA and Office of Surface Mining staff on February 28, 1980.

10. Memorandum on meeting between EPA and surety representatives in New York, June 18, 1980.

11. Bounds, Ann, "The Financial Requirements Approach Taken in the Proposed NRC Regulations on Reclamation Uranium Mill Tailings", July 30, 1980.

12. Kansas Solid Waste Management Standards and Regulations (28-29-1 *et. seq.*).

13. Kansas Solid Waste Management Act, amended 1979 (SB #170).

14. Maryland Hazardous Waste Regulations - Control of the Disposal of Designated Hazardous Substances, 08.05.05, 1977.

15. Environmentally Hazardous Wastes, Oregon Solid Waste Control, Section 459.600.

16. 1977 Wisconsin Hazardous Waste Management Act (Assembly Bill 1024).

17. Memorandum dated March 12, 1980, from Polly P. Neill of International Research and Technology (EPA Contractor) to George A. Garland of EPA, Reporting on personal communication with John Linger, Fairfax County Department of Public Utilities, and with Robert Sharon, Fairfax County Attorney's Office on November 19, 1979.

18. Hazardous Waste Management Issues Pertinent to Section 3004 of the Resource Conservation and Recovery Act of 1976. Prepared for EPA by International Research and Technology Corporation, McLean, VA. Lawrence de Bivort, project manager. Published by Office of Solid Waste, EPA, November 1979, report No. SW-183C, p. 264-265.

III. SYNOPSIS OF REPROPOSED REQUIREMENTS

Requirements for financial assurance of closure and post-closure care of hazardous waste facilities were reproposed on May 19, 1980 (45 FR 33260-78). The reader is referred to the Preamble and Background Document for the reproposal for explanations of the differences between the reproposal and the original proposal of December 18, 1978 (43 FR 58995, 59006-7).

The reproposal required the owner or operator of a hazardous waste treatment, storage, or disposal facility to assure that funds will be available for properly closing the facility. For a disposal facility, the owner or operator had to assure funds for 30 years of post-closure care.

The amounts to be assured would be determined by estimates prepared and kept current by the owner or operator as required by final regulations (§265.142 and 144, issued May 19, 1980). (The latter regulations also exempt States and the Federal Government from financial requirements of owners and operators (§265.140).)

The reproposal allowed the following means of assurance:

Trust funds. Closure and post-closure trust funds would build over the life of the facility up to 20 years. Banks or other financial institutions could act as trustees. Payments were to be adjusted for inflation, other changes in the closure or post-closure cost estimates, and changes in the value of the fund. The owner or operator could be reimbursed for closure and post-closure costs by submitting bills to the Regional Administrator, who would forward them to the trustee for payment if they were in keeping with the closure or post-closure plans or were otherwise justified. Excess funds would be refunded to the owner or operator.

Surety bonds. Surety bonds could guarantee performance of closure or post-closure care. A bond could also be written to assure that a post-closure trust fund would be fully funded at the time of closure. The bond penalty amounts had to keep up with the cost estimates. The bonds could be cancelled only with at least 90-day notice to EPA and the owner or operator. If the owner or operator could not establish other financial assurance in the 30 days after such a notice, the Regional Administrator could order closure. If closure began or was ordered to begin while the bond was in effect, the bond could not be cancelled.

Letters of credit. Bank letters of credit could assure funds for closure, or for a lump-sum payment into a trust for post-closure care at the time of closure, or for monitoring and maintenance over the post-closure period. The amount of the credit had to keep up with the estimates. The period of the letter had to be for at least a year with automatic renewal unless the bank gave 60 days' notice that it was not going to renew. After such notice the owner or operator had 30 days to establish other financial assurance; if he did not, the Regional Administrator could draw on the credit and the bank would place the money into an escrow account with payout provisions identical to those of the trust funds.

Financial test and guarantee. By demonstrating financial strength, an entity would be exempt from providing other assurances. The test criteria were: $10 million in net worth in the U.S.; a ratio of total liabilities to net worth of not more than 3; and net working capital in the U.S. twice the amount of the closure and post-closure cost estimates. An entity with these characteristics could guarantee closure and post-closure funds for another entity. Characteristics had to be demonstrated in quarterly audited financial statements containing unconsolidated balance sheets. If the company no longer met the criteria, it had to notify EPA and establish other financial assurance within 30 days.

Revenue test for municipalities. If the owner or operator was a municipality, it could meet the requirements by having undedicated tax revenues amounting to 10 times the cost estimates. The municipality had to send a letter to EPA stating that it met this requirement. If revenues fell below the required level, the municipality had to notify EPA and establish other financial assurance within 30 days.

Variations. The owner or operator could use more than one instrument to provide financial assurance for closure or post-closure care, he could use a mechanism to cover multiple facilities, and he could use a mechanism to cover both closure and post-closure care.

State-authorized mechanisms. States in which EPA administers the hazardous waste regulatory program may have their own regulations requiring financial assurances. If specific mechanisms are required by a State, the owner or operator could use them to satisfy the EPA requirements if they were substantially equivalent to the mechanisms specified by EPA.

State guarantees. If a State assumed legal responsibility for closure or post-closure care or liability coverage, or guaranteed that funds would be available for these purposes, such State guarantees could be used to satisfy the EPA financial requirements to the extent that they provided substantially equivalent assurances. The owner or operator had to send a letter to EPA citing the State regulation providing for such assumption of responsibility.

IV. ANALYSIS OF COMMENTS AND RATIONALE FOR FINAL STANDARDS

Comments on the reproposed requirements for financial assurance of closure and post-closure care, the Agency's responses, and the rationale for the chosen actions are discussed in this chapter.

This chapter is organized by the following topics:

A. Applicability
B. Estimating Closure and Post-Closure Costs
C. General Issues Regarding The Financial Assurance Mechanisms
D. Trust Funds
E. Surety Bonds
F. Letters of Credit
G. Financial Test and Guarantee
H. Revenue Test for Municipalities
I Variations in Use of Instruments
J. Incapacity of Issuing Institutions
K. Applicability of State Financial Requirements
L. State Assumption of Financial Responsibilities
M. Other Mechanisms Reviewed or Under Consideration
N. Other Issues

Unless otherwise specified, the discussions below refer to both Part 264 and Part 265. Also, the discussions of financial mechanisms refer to their use for assuring either closure or post-closure care unless otherwise specified.

A. Applicability

The applicability of the interim status financial requirements was set forth in §265.140 as promulgated May 19, 1980 (45 FR 33243-44). This section designated the applicability of the provisions on cost estimating (closure cost estimates are required for hazardous waste treatment, storage, and disposal facilities; post-closure cost estimates are required only for disposal facilities). It also exempted States and the Federal Government from the requirements of Subpart H on the grounds that these entities will always have adequate resources to conduct closure and post-closure activities properly.

Reproposed Regulation and Rationale. The reproposal contained an applicability section since the applicability of the new sections being proposed had to be designated. Essentially it said that the sections on post-closure cost estimating and financial assurance applied only to disposal facilities, and the remaining sections applied to all hazardous waste treatment, storage, and disposal facilities covered by Parts 264 and 265. The State and Federal exemption was not included in the reproposal because that was already a final rule. No other exemptions were provided for.

Comments and Responses. Several types of exemptions were recommended by commenters:

° Financial assurance requirements should not be necessary if the cost estimates are below a certain level. In some instances, administrative costs could exceed closure costs.

EPA believes that closure and post-closure funds should be available for all facilities. There is no reasonable basis for determining a cost level below which the public should bear added risk. For a small cost estimate, the financial burden of assuring funds will also be small. Therefore, allowing owners and operators with small cost estimates to be exempt is not justifiable in the Agency's view.

° Requirements for financial instruments and the financial test should be loosened for on-site facilities. The owners and

> operators of these facilities are less likely to suddenly abandon the site. The Regional Administrator could require the more stringent provisions upon a finding that a facility was to close, that other on-site operations were insubstantial in relation to the closure obligations, or that the responsibilities were in danger of not being met. The St. Louis Park case EPA used for justifying same treatment for on-site as off-site facilities is not relevant.

No valid distinction can be made between off-site and on-site facilities for the purposes of these regulations. All types of businesses can fail or suffer severe reverses. Availability of funds is not assured because the owner or operator is not primarily in the hazardous waste management business. Furthermore, "on-site" can refer to plants where the hazardous waste facilities are very extensive or minor; the category does not offer a basis for allowing lesser requirements. The site in the St. Louis Park case was, in fact, on-site and is thus relevant. The fact that ownership was transferred to the city before extensive pollution problems were discovered does not destroy the relevance of the case. Examples of on-site facilities that were abandoned by their owners would include the following:

The American International Refining Corporation operated a Bruin, Pa., site until 1972. In 1968, leakage from a waste storage lagoon containing oils, acid wastes, and alkyl benzene sulfonate into the Allegheny River killed fish valued at $108,000. The firm could afford to pay only $20,000 to cover the damage. The site was abandoned in 1972 when the company went out of business. The State has spent over $20,000 for cleanup since 1973.[1]

At Nockamixon, Pa., 3 of 11 industrial waste lagoons operated by the Revere Chemical Company leaked into a stream. After the State ordered that the site be cleaned up in 1970, Revere abandoned the site and left lagoons containing 3 1/2 million gallons of waste. The State intervened and spent over $400,000 for cleaning up the site.[1]

- Electric utilities should be exempt since they are highly regulated and there is little likelihood that they would be allowed to fail.
- Rural electric cooperatives have had an excellent record in avoiding default and have access to Federal financial support.

The Agency has granted a generic exemption to States because it believes that States will always have adequate resources to conduct closure and post-closure activities properly. They have proven longevity, access to tremendous assets, and have generally avoided bankruptcy. Electric utilities or other public utilities do not necessarily exhibit these characteristics. Their assets are not always large. Indeed, an electric utility may consist of a single power generating facility or of a facility only distributing power to a very small area. A facility of this type may not be able to afford an unplanned expenditure for closure or post-closure care of a treatment, storage, or disposal facility.

In the past, electric utilities and other highly regulated industries have experienced bond defaults[2] and other severe financial difficulties.[3] Although a utility may continue to exist and provide customer service following liquidation, this could possibly result in delays in obtaining adequate funds for closure and post-closure care. Even though rural electric cooperatives have successfully avoided default and receive special Federal government support, it is not clear that every rural electric cooperative could afford the closure and post-closure expenditures that would be required of them. Furthermore, the qualification of a rural electric cooperative for Federal financial support is under the discretion of the Administrator of the Rural Electrification Administration (REA).[4] The

Federal loans and loan guarantees mandated by the Rural Electrification Act of 1936 to be made to the rural electric cooperatives are contingent upon the cooperatives' loan application passing legal, engineering, economic, and financial tests developed by the REA.[5]

- Hazardous waste transporters should be required to assure financial responsibility.

EPA has issued standards for transporters of hazardous waste in conjunction with the Department of Transportation. Over 90 percent of hazardous waste transportation is via trucks. Under the Motor Carrier Act of 1980 (P.L. 96-296), carriers of hazardous wastes and other hazardous materials will have to have liability insurance ranging up to $5 million for "extremely hazardous" materials. This would appear to be a very major step forward. The Department of Transportation issued an Advanced Notice of Proposed Rulemaking on August 28, 1980 (45 FR 57676), setting forth a number of questions for the purpose of gathering information to assist DOT in promulgating regulations in the area of motor carrier financial responsibility.

The major railroads have liability coverage with $5 and $10 million deductibles. Some of the short-line railroads do not have liability insurance. Thus far, the railroads have cleaned up all spills. At present, their operations are heavily subsidized by the government, however.[6]

- Some commenters favored exempting municipalities; others felt they should be treated like other entities.

There have been municipal bankruptcies and defaults on debts, although these events are relatively rare and the recovery rate has been high, especially in recent years[7] (see Tables 1 and 2). It seems clearly possible that municipalities, especially smaller ones, could find that they were

TABLE 1

MUNICIPAL DEFAULT EXPERIENCE UNDER CHAPTER IX

Period	Number of Cases Filed[a]	Recovery Rate For Cases Filed and Concluded[b]	Total Business Bankruptcy Filed[c]
1938-40	210	66%	-
1941-50	115	65%	56,766
1951-59	27	75%	89,880
1960-72	10	95%	211,340
1973-79	7	-	195,785

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[a] Source: Hempel, George H. The Postwar Quality of State and Local Debt. Columbia University Press, New York, 1971.

[b] Percentage of admitted debt in default ultimately paid for cases filed and concluded.

[c] Source: Tables of Bankruptcy Statistics. Administrative Offices of the United States Courts, 1980.

TABLE 2

DEFAULTS ON STATE AND LOCAL DEBT*

	1940-49	1950-59	1960-65	Number of Governmental Units-1962
States	0	0	0	50
Counties and Parishes	6	12	17	3,043
Incorporated Municipalities	31	31	70	17,997
Unincorporated Municipalities	7	4	20	17,144
Special Districts	5	23	41	34,678
Other	30	42	44	18,323

Source: Hempel, George H. The Postwar Quality of State and Local Debt. Columbia University Press, New York, 1971.

*This record of defaults is the result of a study of the municipal default record examining a variety of sources of default data. There is no single data base from which the total number of municipal defaults can be gathered, and this record could not, therefore, be brought up to date.

unable to afford closure or post-closure costs, because closure became necessary prematurely or the costs were not adequately planned for. Even in the case of larger communities, if funds are not set aside for the purpose of closure and post-closure care, it may take some time before funds can be allocated, particularly if legislative processes, bond issues, or voter approval of new taxes are necessary. For these reasons EPA believes municipalities should not be exempted from the financial requirements. However, the special characteristics of municipalities--their record on bankruptcies and defaults, their responsibility for public health, their general longevity--are being considered in the work being done on the revenue test and financial test.

Final Regulation The "Applicability" section for Part 265, Subpart H, is amended to designate applicability of the new sections. Again, except for sections strictly on post-closure financial assurance, which apply only to disposal facilities, all sections apply to all treatment, storage, and disposal facilities. The same provisions are established for Part 264, Subpart H.

B. Estimating Closure and Post-Closure Costs

Interim status standards for estimating the costs of closure and post-closure care (§265.142 and 144) were promulgated May 19, 1980 (45 FR 33243-44). They require the owner or operator to prepare estimates based on the closure and post-closure plans and other requirements of Part 265. The estimates must be adjusted for inflation and for changes in the plans. The closure cost estimate must be for closure at the point in the facility's operating life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan. The post-closure estimate must be for 30 years of post-closure. These provisions help assure the adequacy of the estimate whenever closure becomes necessary.

The same standards are now promulgated for Part 264, except that: requirements for completing actions by the "effective date of the regulations" are deleted since they would not be applicable to new facilities; the post-closure estimate must be for the period of post-closure care assigned at the time of permitting (to conform to Subpart G of Part 264); and a comment is added saying that the estimates must be submitted to the Regional Administrator with Part B of the permit application under Part 122 and EPA may require modifications as a condition of any permit issued.

C. General Issues Regarding the Financial Assurance Mechanisms

In the final regulations, as in the reproposal, the owner or operator of each hazardous waste treatment, storage, or disposal facility must establish financial assurance for its closure. The owner or operator of a disposal facility must also provide financial assurance for post-closure care. He may use one or more of the several mechanisms allowed by the regulations to meet those requirements. The amount of funds assured must at least equal the adjusted cost estimates.

For existing facilities, financial assurance must be established by the effective date of the Part 265 financial assurance requirements. For new facilities, assurance must be established as specified in Part 264 at least 60 days before hazardous waste is first received at the facility for treatment, storage, or disposal.

The Agency believes that at least 60 days must be allowed for adequate Agency review of evidence of financial assurance and for any necessary modifications that may be required of the owner or operator. Financial assurance meeting the specifications of these regulations should be established before hazardous waste is first received for treatment, storage, or disposal since such receipt may mark the beginning of need for eventual closure and post-closure care in accordance with Part 264 standards.

1. Compliance Proceedings.

Reproposed Regulation and Rationale. In the reproposal, the Regional Administrator could direct the use of trust funds, draw down on a letter of credit, or call in a surety bond or guarantee upon "determination of a violation of the closure or post-closure requirements rendered in a proceeding pursuant to Section 3008 of RCRA". This referred to an administrative decision reached after notice of violation, 30 days for the owner or operator to comply, and then opportunity for a hearing--the process outlined in Section 3008 for determining violations of the Subtitle C regulations. The process was not required in the reproposal for drawing on a letter of credit after a bank gave notice of nonrenewal and the owner or operator had not established other financial assurance, or for ordering closure because a bond was about to be cancelled, or because of nonpayment of a trust payment, or because a company failed the financial test but did not establish other financial assurance in 30 days, etc. The Agency reasoned that in these circumstances the situation was clearly ascertainable without the Section 3008 process, and in several of the instances delay would mean loss of the assurance provided by the instrument or increasing likelihood of bankruptcy of the owner or operator.

Comments, Response, and Final Regulation. Several commenters thought that the procedures in the reproposal were not sufficiently protective of the rights of the owner or operator:

- Funds should not be expended until a final judicial determination of the issue is made or the owner or operator and the Regional Administrator reach an agreement. To do otherwise would be to deny the right of appeal and cause premature closing of a facility.
- Invoking any of the financial vehicles prior to a final legal determination or a final disposition of the dispute may have an adverse effect on the credit of the company. . . . The Regional Administrator should be able to call in a bond or letter of credit after notice of nonrenewal only after a temporary or permanent injunction is obtained.

The procedures to be used for enforcing compliance with regulations under Subtitle C of RCRA are prescribed in Section 3008 of RCRA, which authorizes the Administrator to determine when violations have occurred and to issue compliance orders. Pursuant to Section 3008 an opportunity for a public hearing is provided before a compliance order or suspension or revocation of a permit becomes final.

The final regulations have clarified procedures relating to cancellation of financial assurance devices. Although continuous availability of funds is a basic consideration of EPA in developing requirements for financial assurance for closure and post-closure care, the Agency recognizes the desire of financial institutions and surety companies for means of terminating letters of credit and bonds issued on behalf of owners and operators. Consequently, the final regulations include provisions for cancellation under limited circumstances. However, the owner or operator will be deemed to be without financial assurance and in violation of these regulations upon receipt by EPA of a notice of cancellation or nonrenewal, and EPA thereupon will begin compliance proceedings under Section 3008 of RCRA. In the event the owner or operator cannot satisfy a compliance order requiring alternate financial assurance, EPA will require funding of a standby trust (described below) by the surety or issuer of the letter of credit.

In order to assure that funds will be available for closure and post-closure care, and that initiation of compliance proceedings does not immediately precipitate termination of surety bonds and letter of credit, all such instruments must provide that no termination shall occur while compliance proceedings are pending, irrespective of the subject matter of the compliance proceedings.

2. Levels of Assurance Among Mechanisms

Reproposed Regulation and Rationale. In the reproposal trust funds were allowed to build over 20 years or facility life, whichever was shorter, but the other mechanisms were required to assure funds for the whole amount of the cost estimate from the effective date of the regulations. The Agency believed that financial assurance for the whole amount should be established from the start so that whenever closure became necessary, adequate funding would be available. A major exception was made for trust funds because the Agency was concerned that establishing the trusts in a lump sum would cause some owners and operators to go out of business and therefore possibly contribute to a capacity shortage.

Comment, Response, and Final Regulation. Several commenters expressed the following objection:

- For equitability, EPA should allow all mechanisms to build financial assurance over 20 years like the trust fund.

EPA is allowing owners or operators to select from a variety of financial mechanisms to meet the requirements of these regulations. It is doing so to minimize their cost. Since an owner or operator is free to choose from among the devices, he may select that alternative which seems most advantageous. Thus, no inequity is created.

3. Allowing Use of Mechanisms, and Forms Not Specified in the Regulations.

Reproposed Regulation and Rationale. The reproposal allows only specific mechanisms and forms. The intent was to allow all feasible and effective mechanisms but with specifications and forms that would enable the Agency to monitor the program without excessive administrative burdens. Use of standard forms for the financial instruments means that individual owners and operators, banks, and sureties would not have to develop the instrument's language, nor would EPA have to evaluate the language of each instrument submitted.

Comments, Responses and Final Regulation. A number of commenters recommended greater flexibility and openness to suggestions:

- RCRA requires performance standards, whereas these regulations prescribe exclusive means.
- It is obvious that EPA cannot think of all possible situations; the Regional Administrator should be able, on special requests, to review other proposals and either accept or reject them.
- Standard forms may cause a problem because financial institutions have different informational requirements.
- EPA should set up an evaluation group to monitor financial and insurance impacts in coming months. There are many uncertainties. Keep open the comment period and have another public hearing in the fall of 1981.

Section 3004(6) requires EPA to promulgate regulations establishing performance standards, including requirements respecting qualifications for financial security. There is nothing in the language of the statute that implies that EPA cannot make specific requirements regarding demonstration of such financial security. To the contrary, EPA is clearly empowered to choose specific modes of performance where such specificity is necessary or desirable to demonstrate compliance with the performance standards.

After an extensive period of proposals, public comment, and analyses, EPA believes it has included those mechanisms that adequately provide financial assurance and that are feasible. The Agency will continue to be receptive to proposals and may add to, subtract from, or alter the currently allowed mechanisms in light of such suggestions and its experience during implementation. Allowing proposals in place of specified mechanisms, however, would impose an intolerable administrative burden on the Agency, especially in light of its limited experience and resources in the area of evaluating financial mechanisms. The Agency expects that a large number of owners or operators might seek to demonstrate financial assurance by alternative mechanisms if they are allowed to do so. The Agency believes that in such an event, mechanisms that do not adequately assure that funds will be available in a timely manner would inadvertently be accepted. This would result in inadequate protection of human health and the environment and, in addition, an inconsistent and possibly inequitable administration of these requirements. Consequently, the Agency concluded that it must require specific mechanisms for financial assurance.

The Agency has developed standard language for trusts and other instruments with extensive consultation with the financial community. We believe the forms will be acceptable to most, if not all, financial institutions. EPA believes that standard language is necessary for the same reasons that standard mechanisms are needed. The Agency simply does not have the resources or expertise to review every trust or other instrument to determine whether it adequately assures the availability of funds for closure or post-closure care.

EPA does have an evaluation plan for the financial requirements and the other Subtitle C regulations, as required by Executive Order 12044, "Improving Government Regulation." The objective will be to obtain data in order to spot problems in the program and make needed changes; satisfy information needs of EPA management, Office of Management and Budget, and Congress; and continuously upgrade the regulations to more effectively achieve their goals.

The Agency will be continuously open to suggestions for improved financial assurance methods and will be especially interested to hear about experiences of owners and operators in using the specified mechanisms. At this time the Agency has no plan for another hearing since a specific need for one is not clear.

4. Degree and Duration of Risk

Commenters noted that the level of risk that the management of hazardous waste posed was not considered in the regulations and that this was required by the last paragraph of Section 3004 of RCRA. The Agency's position on this issue is explained further in Chapter II (Rationale for Regulation) of this document. There is a variable and contingent risk of accidents associated with the management of hazardous waste, which is addressed by the liability insurance requirements, discussed in Part II of this Background Document. However, closure and post-closure care are required activities, and as such they do not represent a contingent liability. Further, the Agency believes its financial responsibility requirements represent the minimal level of efforts that responsible companies would undertake in the operation of hazardous waste management facilities. Should the degree and duration of risk associated with the management of hazardous waste indicate more stringent requirements are necessary, EPA will make adjustments to its requirements to reflect that need.

5. Standby Trusts to Accompany Letters of Credit and Surety Bonds

Reproposed Regulation and Rationale. In the reproposal whenever a letter of credit was drawn on or funds received from a surety, the money went into either an escrow account or, in the case of post-closure surety bonds, a trust fund. EPA believed the escrow used in conjunction with the letter of credit was a simple mechanism for holding the funds until they were used for closure or until the owner or operator established another mechanism. If funds for closure and post-closure activities were paid directly to EPA, they would have to go into the Treasury and could not be specifically allocated for closure or post-closure duties (see 31 U.S.C. §484).

Comments, Responses, and Final Regulation. There were no comments on these arrangements except:

- The escrow account should be more closely specified, such as how much interest is to be paid. Several bank representatives said they would prefer not to have the escrow account mentioned in the letter of credit (to limit responsibility); others said it did not bother them.

After comparing escrow accounts and trust funds, the Agency decided that for the purpose of the regulations, escrows were less secure and potentially more burdensome to the Agency than trust funds (see Section N).

The final regulation requires that owners and operators who obtain letters of credit or surety bonds to provide the required financial assurance must also establish a standby trust fund at the same time, so that a depository mechanism is available whenever needed. Under the terms of the letter of credit or surety bond, any funds drawn under those instruments are to be placed directly into the trust fund by the institution making the payment. EPA plans to seek authority from Congress to directly receive and disburse funds derived from financial assurance mechanisms under RCRA. IF EPA obtains that authority, owners and operators would no longer be required to establish standby trust funds.

Mention of the standby trust fund was kept in the letter of credit despite the preference of some banks not to have it since EPA felt it was needed to ensure payment directly into the trust.

D. Trust Funds

Generally, a trust is an arrangement in which one party, the grantor, transfers legal title to property (usually money) to another party, the trustee, who manages the property for the benefit of one or more beneficiaries. For the trust funds specified in these regulations, the owner or operator is the grantor; a bank or financial institution, as specified in the regulations, is the trustee; and EPA is the beneficiary.

These trusts are irrevocable; they cannot be changed or terminated by the grantor without the consent of the beneficiary and the trustee. A trust is established when the trust agreement is signed by the grantor and the trustee [8].

A standby trust fund, which an owner or operator must establish if he uses a surety bond or letter of credit for the purposes of these regulations, is essentially the same as the trust fund used as a primary financial mechanism. However, after a nominal initial payment as agreed upon by the owner or operator and the trustee, further payments as specified in the regulations are not required until the standby trust is funded by a payment to it made by a surety company or an institution issuing a letter of credit, or by the owner or operator in order to comply with the regulations. From that point, further payments as specified in the regulation will be required in order to maintain the trust fund in the amount of the closure and/or post-closure cost estimate.

1. Suitability of Trust Funds for Purposes of These Regulations

Reproposed Regulation and Rationale. Under the original proposal of December 1978 the trust fund was the only mechanism allowed for assuring closure and post-closure funds. In the reproposal, the trust fund continued to be allowed because it was considered to be reliable, available, and administratively manageable. Other methods for demonstrating financial assurance were added in the reproposal in response to comments received by the Agency.

Comments and Responses. Comments received on the use of a trust fund as a mechanism for demonstrating financial assurance of closure and post-closure care can be grouped as follows:

- Some commenters said the trust fund was an expensive instrument since companies will lose the use of capital. Small companies, especially, would be hurt.
- Other commenters said it is the only mechanism that assures payment of closure and post-closure costs, and companies that have difficulty funding the trust could obtain a loan in order to make payments.
- Compared with the other mechanisms, the trust funds are better protected from the claims of creditors in the event of bankruptcy. Other commenters disagreed, contending that no one really knows the effects of the new bankruptcy law.

Under the final regulations, trust funds continue to be one of the acceptable instruments for assuring closure and post-closure funds. If the closure and post-closure cost obligations are large, the trust fund payments may be burdensome to the owner or operator, and opportunity costs are incurred, since companies lose the use of capital that must be diverted to the trust fund. Nevertheless, the trust fund is a mechanism that should be widely available for the purposes of these regulations and, as discussed later in this document, it appears that the assets are better protected from the claims of creditors than is likely with many of the other mechanisms that were considered. The Agency examined the trust fund instrument and found it to be effective; therefore, it is retained among the Subpart H options.

- Trust funds are available to all owners or operators; no one is favored because of size or other factors.
- The standard trust agreement will help increase availability, as will authorization of commingled funds for investment activity by the banks and investment in the banks' certificates of deposit.
- Larger banks said that some of the trust fund amounts will be too small for banks to accept; they would not be worthwhile due to administrative and potential legal costs. Smaller banks said they would consider the smaller trust funds.

The Agency believes, on the basis of discussions it had with bankers and other commenters in the financial community, that trust funds will be widely available. The standard form should increase availability because it will reduce the time, effort, and costs of preparation that would otherwise be required of the owner or operator and the trustee in establishing a trust fund to meet the requirements of these regulations.

To increase availability, EPA authorized investments in a trustee institution's certificates of deposit and requested the Securities and Exchange Commission (SEC) to issue a "no-action" letter concerning commingling of funds. The Agency received such a letter from the SEC dated October 20, 1980, indicating that it would not recommend any enforcement action. (see the discussion on investments below).

EPA notes that many of the commenters from large banks were familiar with corporate trusts. A corporation, to finance its capital requirements, will often borrow funds by issuing bonds or other debt securities. A trust is established so that the trust institution may act on behalf of the individuals or institutional investors who purchased the securities, enabling the corporation to work with the trustee rather than numerous lenders. Generally, these corporate trusts will involve amounts much greater than the closure and post-closure trusts.

EPA contacted trust officials at some of the smaller banks to determine whether the size of the trust would play an important role in availability; those commenters said size was not an essential factor and they would consider accepting the trusts in smaller amounts. Some of these commenters compared the size of the smaller closure trust funds with those established under a Keogh or Individual Retirement Account plan[9]. Therefore, EPA believes the size of the trust fund should not be a significant problem regarding trustee availability.

Final Regulation. The trust fund is retained as one of the acceptable methods for demonstrating financial assurance for performance of closure and post-closure activities. The Agency believes the trust fund instrument will be effective for the purposes of these regulations and that it will be the most widely available mechanism. In addition, the Agency continues to allow other mechanisms for demonstrating financal assurance, which may be less expensive for owners and operators and which are discussed later in this document.

2. Comments on Who Should be Authorized to Act as a Trustee

Reproposed Regulation and Rationale. In the original proposal, a bank or other financial institution approved by the Regional Administrator could act as a trustee. Under the reproposed regulations, this was modified to exclude the requirement of the Regional Administrator's approval. EPA believed this change would avoid the delay to owners or operators and the administrative burden to the Agency that was likely to result from instituting an approval process. In addition, EPA recognized that banks frequently act as trustees, are subject to considerable governmental oversight, and are suitable for involvement in long-term arrangements because of their relative stability.

Comments and Responses. Comments on who should be authorized to act as a trustee were as follows:

- EPA should allow qualified individuals to act as trustees in order to increase availability, especially for the smaller trusts.
- Trustees should be financial institutions authorized to act as trustees by virtue of State or Federal law, so they could fall under the scrutiny of a regulatory authority. If the financial institution is Federally insured and regulated, there will be an acceptable level of safety and soundness.
- Some commenters said foreign banks should be authorized to act as a trustee; others said they shouldn't.
- Since savings and loans will soon have Federal authority to act as trustees, they should be authorized to act as trustees.

For the reasons of stability and oversight explained above, financial institutions are preferable to individuals serving as trustees under these regulations. Furthermore, it would be difficult for the Agency to devise qualifications for individual trustees that would assure adequate administration of these long-term trusts.

The Agency firmly believes that, in addition to the basic requirement that the financial institution have authority to act as a trustee, the institution's trust activities should be subject to some type of regulation and examination. Banks and financial institutions are under the jurisdiction of numerous Federal and State agencies, such as the Comptroller of the Currency, Federal Reserve System, Federal Deposit Insurance Corporation (FDIC), Federal Savings and Loan Insurance Corporation (FSLIC), Federal Home Loan Bank Board (FHLBB), and analogous state regulatory agencies. The Agency believes that requiring appropriate regulation and examination will provide an acceptable level of safety and soundness regarding the institution's activities, and the interests of the parties to the trust agreement.

If branches of foreign banks are able to meet the criteria for trustee institutions set forth in the regulations, owners or operators may choose them as trustees.

The Federal Home Loan Bank Board (FHLBB), a part of the FSLIC, is currently developing regulations under authority of the Monetary Act of 1980 (P.L. 96-221 Title I, 94 Stat. 132-141), to allow savings and loans to act as trustees[10]. When those FHLBB regulations become effective, an owner or operator may select a savings and loan which meets the EPA regulatory criteria to act as a trustee.

Final Regulation. The final regulation authorizes a bank or financial institution which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency to act as a trustee.

3. Objections to the Trust Fund Agreement

Reproposed Regulation and Rationale. The originally proposed regulations did not include a standard trust agreement. One was set forth in the reproposed regulations because EPA believed a standard trust agreement would ease the administrative burden to the Agency, the trustee, and the owner or operator. The form contained purpose, property, and period clauses, as well as provisions for the operation of the trust and the duties of the trustee. It did not contain an investment clause and a number of other standard provisions that EPA thought could be left to coverage by State law or private arrangement between the owner or operator and the trustee.

Comments and Responses. Commenters suggested several changes in the trust fund agreement, along the following lines:

- o There shouldn't be a standard form because of the different State fiduciary laws; the Regional Administrator should be given permission to review and approve any necessary adaptations.
- o The standard form will increase availability and cut down on time and cost requirements for establishing the trust funds.
- o The regulations should not be specifically referenced in the agreement since they give the appearance that the trustee is responsible for their implementation, and because the regulations could be changed.

The Agency believes the trust agreement form, after changes made as suggested by various banking and trust experts, should be acceptable in all States and increase availability of trustees. It is necessary to devise a standard form in order that excessive efforts by the Agency will not be required in monitoring the content and treatment of these instruments. The standard trust agreement in the final regulations accomplishes its intended purposes per the trust fund requirements, yet it will require only minimal effort, time, and cost on the part of EPA, trustees, and owners or operators to establish the trust.

An "acknowledgment page" generally accompanies every trust agreement. This page contains a notary public's attestment as to who signed the agreement, thus serving as evidence should questions about the identity of the grantor arise. However, the American Bankers Association, which assisted EPA in this area, advised the Agency that a standard acknowledgment page would not suffice for all States[11]. Therefore, it will be up to the owner or operator and the trustee to see that an acceptable formal certification of acknowledgment accompanies the trust agreement.

The Agency does not intend that the trustee be responsible for implementing the regulations and, understanding the need to refer only generally to statutory authority, has removed specific references to the regulations.

- o Trust assets can be attached if the owner or operator goes bankrupt. Also, the bank or financial institution might be named in a suit brought against the hazardous waste management facility and therefore, the assets could be used for some other purpose. To protect against these occurrences, EPA should modify the trust language.
- o Trust assets cannot be attached in the event of bankruptcy of the owner or operator. It seems highly unlikely that bankruptcy courts would allow access by creditors to monies in a trust fund that was established to fulfill National policy. There would be no reason for the trustee to be named in a suit brought against the owner or operator for problems at the site.

EPA agrees that it seems unlikely that trust assets would be used to settle the accounts of a bankrupt company, particularly since there is little reason for a court to allow use of these trust assets for other than their intended purposes. The Agency also believes that if the trustee is brought into any suit filed because of activities at the hazardous waste management facility, the limits of his liability should be clear under the terms of the revised trust agreement. Moreover, the Agency added language to the trust agreement that describes the general purpose of the trust fund, stating that it is established for the benefit of the Agency and it is not intended that any third party have access to the funds, except as provided in the agreement.

- o Most commenters said the trust agreement should have language on investment activity limiting trustee discretion, thus lessening the possibility for litigation.
- o A few commenters said there shouldn't be any restrictions on investment activity, some said investments should be guided by the "prudent man" standard, and some said such activity should be as permitted under the rules of the jurisdiction in which the trust is administered.

- Different commenters said specified investments should be made in: cash and marketable securities to parallel the pay-in provision; conservative investments, such as government securities, to preserve the corpus; more speculative investments, such as common stocks and real estate, to possibly increase earnings.
- There should be options or ratios among conservative and more speculative investments.
- Investments in the hazardous waste facility or other operations of the owner or operator, or his affiliates should not be allowed.

EPA sought the advice of several financial specialists from banks and associations in developing the investment language used in the trust agreement; it received widely divergent opinions. The Agency does not believe it has the expertise to develop language on specific investment activity, or that such specification is entirely necessary. However, certain basic qualifications are appropriate and are addressed in the trust agreement.

The trust agreement provides that the trustee, or any fiduciary of the trust, will manage the trust assets in acccordance with a modified "prudent man" rule, with certain exceptions. Generally, a fiduciary is one who acts in a capacity of trust and confidence on behalf and for the benefit of another. The prudent man standard for trust investment is a doctrine well established from a rule originally stated in 1830[12]. It calls for trustees to conduct themselves with the prudence, discretion, and intelligence they would exercise in the management of their own affairs in regard to the permanent disposition of their funds, taking into account the probable income and safety of the capital to be invested.

The Employee Retirement Income Security Act of 1974 (ERISA), an act which established provisions for management of the assets of trusts established for pension plans, requires the fiduciary to discharge his duties "...with the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent man acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character and with like aims....". (29 USC §1104).

This statutory language constitutes the basis of the investement guidelines for management of the trust assets by the trustee or fiduciary. In addition, the Agency added three exceptions. The first is that investment in the activities of the owner's or operator's businesses, or of any of its affiliates, will not be allowed; such investments could be worthless in the event of bankruptcy. The term "affiliate" is to be interpreted in accordance with §2(a)-(f) of the Investment Company Act of 1940, as amended, (15 USC §80a-2.(a)), which defines an affiliate generally as an individual or company which has control of 5 percent or more of the outstanding voting securities of a company.

However, securities and other obligations of the Federal or a State government are specifically exempted from this restriction. While Federal and State governments are exempt from the financial requirements, there could be situations where the Federal or State government is the owner of the land but the operator is some other entity who, consequently, may be the party responsible for meeting the financial requirements. In that situation, without the above exemption, Federal or State bonds, for example, would technically be excluded from allowable investments because they are securities of the owner. Clearly, such an exclusion is not desirable since these investments are highly secure.

The second exception is authorization for the trustee to invest the funds in time or demand deposits of the trustee, up to the insured amount.

This is a fairly common trust practice and, as discussed in the section on suitability of trust funds, may increase the availability of trustees for trusts that involve relatively small amounts.

The third exception authorizes the trustee to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest on that amount. This facilitates bill payments and investment activities, since cash would be available for anticipated bills and for short term build up of funds, in order to bring about better rates of return with larger investments.

EPA believes, after considering the advice of experts, that options and ratios among types of investments are too complicated and would impose unnecessary activity on the trustee, causing higher trustee fees to be paid by the owner or operator

- o Various commenters said that, in managing the investments, the trustee should be able to register them in nominee form, and hold them in bearer or book-entry form; to hold some cash in non-interest bearing accounts pending investment or distribution; to vote shares.
- o Investment management by others, especially if registered with the SEC under the Investment Advisors Act of 1940, should be authorized.
- o The Agency should seek a "no-action" letter from the SEC so that banks can commingle trust funds for better investment performance; there should be authority to invest in common trusts maintained by the trustee.
- o There should be an accounting of investment activites to cover a certain period, and which is subject to review and approval.

Holding securities in bearer form means they are not registered and are the property of the bearer until title to the security is passed by delivery. Nominee form means titles to registered bonds and other debt securities are held in the name of a person, firm or corporation holding them, rather than the true owner. Book entry is the method by which the ownership of securities is registered and transferred on computers rather than on paper. All of these methods are fairly common treatment of securities in trust administration, since they simplify transfers and paperwork, and all such investments are shown in the books and records of the trustee as part of the trust fund. Accordingly, these activities are provided for in the trust agreement.

Financial commenters told EPA that usual banking trust practice allows for the retention of some cash in non-interest bearing accounts pending investment or distribution, in order to allow more flexibility and better investment activity. As previously discussed, should funds be needed for any payments, they will be available without having to cash in a long-term note, for instance. Commenters from the banking community also advised that it is common trust practice to authorize the trustee to vote shares at his discretion. Again, the trust agreement reflects authorization of these practices.

Trust assets can be managed by persons other than the trustee, such as investment advisors having extensive experience in this area. Therefore, EPA has authorized the management of trust assets by trustees and fiduciaries, as defined in the agreement, who invest in accordance with the prudent man standard discussed above.

A commingled trust fund is a common fund in which the funds of several accounts, often pension funds, are mixed. Since it involves large sums, investment returns are often increased. However, the Glass-

Steagall Banking Act of 1933 (P.L. 66-89, 48 Stat, 184) prohibits banks from managing commingled trust funds. In order for banks to have commingled trust funds for trusts established under the regulations, financial commenters told EPA special legislation, or a "no-action" letter from the Securities and Exchange Commission (SEC) would be required. Such a letter would mean the SEC would not take enforcement action against the bank for operating such a fund. EPA requested that the SEC determine whether such a letter is necessary, and if so, to issue one; the SEC indicated a no-action letter would be appropriate and issued such a letter, dated October 20, 1980[13].

The trust agreement allows authorized investments in common, commingled and collective funds created by the trustee in which the fund is eligible to participate, which should provide a better rate of return, since larger amounts can be invested more profitably. This should increase the availability of trustees as well. Commenters told EPA there would be no problem with the collective investment of funds paid by one owner or operator covering several facilities with one trust fund.

Usual trust practice entails a periodic accounting of the investment activities of the trust funds. The purpose is to permit the grantor, and sometimes the beneficiary, to review the transactions and state any objections. When the accounting report is approved, it lessens the possibility of litigation based on the propriety of investment decisions and activities that took place years before a complaint was made. This report also provides a current statement of the value of the trust fund. Accordingly, the regulations and trust agreement provide for an annual report to the owner or operator and the Regional Administrator of the value of the fund and the investment activities. The owner or operator will have 90 days to review the report and state any objections.

- The trust agreement should address the duties and powers of the trustee, especially regarding payments from the trust.
- There should be provisions for the compensation of the trustee.
- There should be guidance for the trustee if the Grantor is unavailable.
- Language is needed to address the extent of the trustee's liability.
- The procedure for trustee resignation and replacement should be stated.
- It is peculiar, for this type of trust, that trustee consent is required for termination of the trust.

In response to these comments, the Agency added certain provisions to the trust agreement and clarified others. The trustee is now responsible for notifying the Regional Administrator when an owner or operator, during the pay-in period, fails to make a payment to the trust fund within 30 days of the due date, and when 20 percent of the amount allocated for closure remains in the fund; for periodic valuations of the trust fund and reporting of investment transactions; and for making disbursements from the trust fund as directed.

Provisions for compensation of the trustee are included. While specific fee structures are often proprietary information, EPA learned that trustees fees are usually based on a percentage of the amount of the trust fund. Some trustees also charge for transactions, or for the extent of the trustee responsibilities. The Agency attempted to keep trustee activities to a minimum, while still assuring that the purposes of the trust fund are carried out.

If the owner or operator is unavailable or uncooperative during the existence of the trust fund, the trust agreement now addresses what actions may be necessary in situations such as trustee resignation and amendment of the trust agreement.

The trustee is responsible for any errors in the administration of the trust that are the result of not acting in good faith. This includes errors made through willful negligence or gross misconduct.

Upon written agreement of the owner or operator, the trustee, and the Regional Administrator, the trustee may resign or the owner or operator may replace the trustee. In that event, the owner or operator may appoint a successor trustee. If the owner or operator cannot or does not appoint another trustee, the present trustee will request a court of competent jurisdiction to appoint a successor. The owner or operator must change the trustee if the trustee institution fails to meet the requirements of the regulations. The name of the successor trustee and the date on which it takes over administration of the trust will be sent to the Regional Administrator, the owner or operator and the present and successor trustee 10 days before that change becomes effective.

Trustee consent is required for termination of a trust, because the SEC indicated that this would have some bearing on its decision to issue a no-action letter[13].

Final Regulation. The standard language for the trust agreement has been revised to include those provisions and practices that are in keeping with common trust practice, and that do not interfere with the intent of providing financial assurance for the closure or post-closure care of hazardous waste management facilities. The extensive changes include the addition and clarification of language regarding the duties, investment activity, compensation, replacement, and liability of the trustee.

The introductory material to the trust fund agreement describes the parties to and the purpose of the trust fund. Section 1 defines "fiduciary", "grantor", and "trustee" for the purposes of the trust. Section 2 provides for the identification of the facilities and the amounts of the closure and post-closure cost estimates covered by the trust agreement. Section 3 describes the general establishment of the trust. Section 4 provides for the reimbursement by the trustee of the owner's or operator's (or any other person authorized to conduct closure and post-closure activities) closure and post-closure expenditures and for other payments in connection with closure and post-closure care. Section 5 discusses the payments that comprise the fund. Section 6 addresses general trusteee management of the fund, while Sections 7 and 8 more specifically discuss commingling and investment and the express powers of the trustee. Section 9 concerns the treatment of taxes and expenses associated with the trust. Section 10 provides for the annual valuation of the trust and the reporting of that valuation to the owner or operator and the Regional Administrator. Section 11 allows for consultation of the trustee with counsul. Section 12 authorizes trustee compensation. Section 13 sets forth the procedure for successor trustees. Section 14 addresses instructions to the trustee by the owner or operator and the Regional Administrator. Section 15 calls for notice by the trustee of nonpayment to the fund by the owner or operator, to be provided to the owner or operator and the Regional Administrator. Sections 16 and 17 cover amendment and irrevocability and termination of the trust agreement. Section 18 addresses the extent of trustee liability. Section 19 provides for the choice of state law for the administration of the trust. Section 20 is a discussion of the interpretation of the Section headings and use of grammar in the trust agreement. The regulations also provide an example of an acknowledgment page, which must accompany the trust agreement and may differ in content according to state requirements.

The Agency believes the trust agreement language as presented in the final regulation should be acceptable to the affected parties and is appropriate to carry out the intent of the regulations.

4. Comments on Payments to the Trust Fund.

Reproposed Regulation and Rationale. The originally proposed regulation required that the owner or operator make an initial cash payment to the closure trust fund in an amount equal to the closure cost estimate, multiplied by the appropriate present value factor. The owner or operator had to make annual cash payments during the life of the facility to the post-closure trust fund based on multiplying the annual post-closure operating costs by 16.35, then dividing that product by the "sum of annuity" factor for the appropriate period of payment.

The reproposed regulation called for payments to the closure and post-closure trust funds to be made over 20 years or the operating life of the faclity, whichever period was shorter. The payments had to be in cash or marketable securities; the securities were to be valued by the IRS method for valuing securities for estate tax purposes. All valuations were to be made by this method. The reproposed regulation required that the payments be adjusted for inflation, changes in the cost estimate, and changes in the value of the fund.

The Agency increased the pay-in period for the closure trust funds because: it was consistent with the maximum pay-in period allowed for accumulation of the post-closure trust fund in the originally proposed regulation; it would eliminate the need for firms to suddenly divert a large amount of cash into a trust fund; and EPA felt the risk of inadequate funds in the trust in the event of early closure was acceptable since the lump-sum payment might threaten the life of some smaller facilities, thus precipitating a capacity shortage.

Under the reproposal, if an owner or operator failed to make the annual payment within 30 days of the scheduled date, the trustee had to notify the Regional Administrator within 5 days thereafter. The Regional Administrator could then order the owner or operator to begin closure for failure to meet the financial requirements.

The amount of any change in the cost estimate was to be distributed equally among the remaining annual payments. Each year the owner or operator had to determine the value of the fund and make payment adjustments accordingly. Payment adjustments after the pay-in period had to be made within 30 days of any change in the estimates. Owners or operators could pay in the entire amount of the estimate at once or in accelerated payments if they so desired.

If an owner or operator established a trust fund having initially used one of the other financial assurance mechanisms, the amount deposited in the trust had to equal the amount the trust fund would have contained if the trust had been established on the effective date of the regulations, and payments had been made as specified in the regulation.

Comments and Responses. The Agency received several comments regarding the mechanics and tax consequences of payments to the trust, as follows:

- The payments to the trust funds should be tax deductible in the year of payment and the trust income should be tax-exempt if it is not withdrawn from the trust.
- Legislation to provide for favorable tax treatment should be enacted, such as that enacted for the Black Lung Disability Trust Fund.
- An Internal Revenue ruling regarding the tax treatment of these trust funds should be obtained.
- The owners or operators should have the option of directing excess funds to a charity or government agency in order to obtain more favorable tax treatment.

EPA made several inquiries at the Internal Revenue Service (IRS) concerning the tax treatment of the trust funds under the reproposed regulations, although the Agency has no jurisdiction or responsibility in tax matters. The IRS is reluctant to issue rulings on regulations that are only proposed, not final.

According to IRS staff, under current tax rules, while the costs of closure and post-closure care are considered necessary and ordinary business expenses, the activities, and therefore the expenditures, will generally not take place until some years after the trust payments are made. Consequently, the IRS staff said, payments would not be tax deductible in the year of payment, and the trust income would be taxable to the owner or operator at the corporate rate. IRS staff also advised the Agency that the irrevocability of the trust and options of directing excess monies to a public charity or government entity do not change the tax treatment of payments to this trust. However, the fees for the trust will be deductible in the year of payment since the funds do not create or enhance a capital asset, provided that no lump-sum fee payments are made. In that case, the fee would have to be amortized over the period covered by the fee.[14]

The IRS staff cautioned EPA that, since there is no formal ruling on tax treatment of this trust fund, its opinions may not reflect actual tax treatment. It was suggested that the best approach to the situation is to obtain specific statutory language from Congress addressing the tax treatment. The Agency agrees that statutory action such as the Black Lung Disability Trust Fund may desirable, but that is beyond the scope of this regulation.

- Commenters said the type of marketable securities for payments to the trust fund should be specified.
- There should be authorization for the trustee to retain assets received in kind. The payments should be acceptable to the trustee.
- Payments to the trust should not include securities in the owner's or operator's businesses.
- The IRS method for valuing securities is too complicated; securities should be valued at fair market value.

The Agency made changes in the trust agreement and regulations taking into account many of these comments. The payments to the trust fund must be in cash or securities that are acceptable to the trustee, who must act within the prudent man guideline. Therefore, the trustee can retain assets received in kind only if they are acceptable under the provisions of the investment section. Payments to the trust should be acceptable to the trustee, so that securities which may be relatively worthless or difficult to convert to cash are not used. This is a typical trust provision.

All payments and investments will not include securities in any business operation of the owner or operator, except for a Federal or State entity, for reasons of potential bankruptcy discussed above.

The Agency agrees that the IRS method of valuing securities for estate tax purposes may be too burdensome and not in keeping with this type of trust. To ease the administrative burden of the trustee, which helps to keep trustee fees down, securities are to be valued at market value in all valuations of the trust fund payments and assets. Market value is the price at which an investment may be sold at free sale at a recognized trading center.[15]

The Agency received several comments on the length of the pay-in periods for closure and post-closure trust funds:

- Several commenters favored a 20 year pay-in period for both closure and post-closure trust funds, in order to avoid the commitment of large sums of capital by an owner or operator at the outset. These commenters were of the opinion that lump-sum payments or the shorter pay-in periods that had been proposed would impose too great a burden on the regulated community, forcing many firms out of operation and discouraging new firms from beginning operations--and thus reducing the national capacity for hazardous waste disposal at a time when acceptable facilities may already be too few in number.
- Other commenters objected to the 20 year pay-in period as too long, reasoning that the funds available during the lengthy buildup would be inadequate in any of several circumstances, including those where an owner or operator went bankrupt, used up his capacity before intended by the closure plan, chose not to comply with stringent permit requirements, or was forced into closure for violation of any RCRA standards. These commenters warned that it is dangerous to prolong the lives of marginal firms, that an extended pay-in period would not add to the pool of environmentally sound facilities, and that such a pay-in period would, in effect, compel the taxpayer to subsidize closure or post-closure where the owner or operator failed to provide it.
- Some commenters suggested various middle-ground approaches; e.g., since permits will be issued for a maximum of 10 years, the pay-in period should not exceed 10 years.

Under the first proposal issued December 1978 the Agency required that the closure trust fund be fully funded when established. The Agency selected the fully funded trust to provide financial assurance whether closure takes place as planned or closure becomes necessary prematurely due to economic difficulty or as a result of a government agency's order based on problems associated with the operation or maintenance of the facility. Immediate full funding of the trust fund represents a significant financial burden to the regulated community, however, in that it requires the owner or operator to set aside a large sum of capital at one time. This burden assumes an added significance under current tax laws, which do not allow payments into these trusts to be considered a deductible business expense because no expense occurs in a tax sense until the funds are used for closure.

The environmental impact of this economic burden might be substantial. It would tend to drive companies out of hazardous waste management and discourage new companies from entering the field, thus reducing the national capacity for hazardous waste disposal at a time when we may be short of sites which are acceptable from a health and environmental standpoint.

The Agency responded to this problem in the reproposal of May 19, 1980, by allowing a pay-in period of 20 years or facility life, whichever is shorter, for both closure and post-closure trust funds. Also, several alternative mechanisms were allowed which are expected to be substantially less costly to the regulated community.

In the final regulation for interim status, EPA continues to allow both closure and post-closure trust funds to build at 5 percent per year. Interim status is supposed to be a period of transition for hazardous waste facilities from no Federal hazardous waste regulation to fairly complex

Federal hazardous waste regulation. As such, EPA wants the transition to be gradual. The Agency has set the buildup period for trust funds to prevent the dislocations and capacity problems that might occur from a faster buildup of trust funds.

For interim status facilities which become permitted, the owner or operator must fund the balance of the trust funds over the term of the initial permit (a maximum of 10 years under §122.9 of this Chapter). At the end of this term, the Agency may decide not to renew the permit. Based on that consideration, the Agency decided to establish a pay-in period equal to the term of the permit. The Agency does not want to be in the position of having to consider whether to allow a poorly managed site to remain in operation so that it could continue to build its trust fund to afford closure and post-closure care. The trust should therefore be fully funded at the end of the term of the permit to assure that proper closure and post-closure care can be carried out.

EPA will require that trust funds for new facilites also be built over the life of the permit. New facilities, like existing facilities, present a potential for premature closure during the fund buildup period. Again, an apparent simple solution is full funding up front. The Agency need not be concerned about dislocations induced among new facilities by too stringent a pay-in requirement as it does with existing facilities. A decision for immediate full funding, however, sets up a significant differential in RCRA compliance costs between new and existing facilities whose owners or operators need to use trusts to meet the financial requirements. EPA believes it may be counterproductive to establish an immediate pay-in requirement for new facilities, especially when old facilities can build trusts over time. This would encourage the continued use of existing facilities and discourage the building of new sites conforming to current technical standards.

The 5 percent a year pay-in period, which was in the reproposal and is now allowed only during interim status, was criticized by some commenters. They pointed out that the public might have to bear a significant portion of total closure and post-closure costs over that time due to the failures of firms. With a faster buildup, however, there are also closure and post-closure obligations which would fall to the public from firms which close immediately when faced with the higher costs. The Agency believes that some closure and post-closure costs will be borne by the public regardless of the pay-in period.

Although the preceding was the basis for the Agency's decision, extensive analysis was conducted in response to comments that the trust funds should be paid in at once, not over 20 years, in order to minimize the effects of the bankruptcy rate on the amount of closure and post-closure costs borne by the public. This analysis was done separately for existing and new facilities. It required various assumptions and predictions about uncertain future events. The Agency has reached no position on which of these future events are most likely.

EXISTING FACILITIES

Existing hazardous waste facilities will initially be governed by the Part 265 (interim status) regulations. When issued a permit, a facility will then be governed by the Part 264 (permitted status) regulations. It will take several years to issue permits for all existing facilities. Interim status is designed to be a period of transition for hazardous waste facilities from no

Federal regulation to fairly comprehensive regulation. As such, the Agency's objective is that the transition be gradual, in order to avoid dislocations or capacity problems that comprehensive regulations might otherwise cause.

The Bankruptcy Rate and Recovery of Unfunded Trust Payments

A study was undertaken to calculate an optimum pay-in period that would minimize the costs the public will assume when the funds in an owner's or operator's trust are insufficient for closure or post-closure, recognizing that, in events of premature closure, complete assurance of funds for closure and post-closure will not be provided through the trust fund mechanism.

Fundamentally, the study was concerned with comparing the potential for bankruptcy of owners or operators using trust funds for existing facilities building over a 20 year period with alternative pay-in periods. To begin the study, the annual bankruptcy rate was estimated for the type of firms expected to use trust funds. The percentage of trust fund payments that would go unfunded at that rate of bankruptcy for various pay-in periods were then computed.

To get an idea of what the bankruptcy rate might be for trust fund users, the staff focused on three probable attributes it believes firms that would establish trusts are likely to have. First, nearly all of these firms will be manufacturing companies, since 95 percent of the waste generated in 1980 is from manufacturing industries.[16] Second, most trust users will be intermediate-size firms; small firms would be most likely to dispose of waste off-site and large firms would be more likely to obtain a letter of credit or a surety bond. Third, many trust fund users will be firms that do not have strong credit ratings or sufficient collateral -- they must establish a trust fund, because these factors preclude them from employing other financial assurance mechanisms.

An analysis of historical bankruptcy data focusing on the first two attributes -- manufacturing companies of intermediate size -- showed that the annual failure rate for firms of this size would most likely be about 1 percent (Appendix A). A separate analysis, however, focusing on the first and third probable attributes of trust fund users -- manufacturing companies with poor credit ratings -- indicated the annual failure rate would probably be 1.5 percent (Appendix B). Both estimates of the bankruptcy rate were used to provide a reasonable range for what the actual rate of business failure might be for trust fund users.

To estimate the effect of these bankruptcy rates for different pay-in periods, the staff then constructed a computerized financial model to calculate the percent of trust payments that would be left unfunded under different pay-in periods at each bankruptcy rate (Appendix C). Exhibit I shows the results of the analysis when the assumption is made that EPA will not recover any of the money that has not yet been placed in the trust funds of firms that go bankrupt each year.

Exhibit I - Percentage of Total Trust Funds Not Collected*

	Length of Trust Fund Pay-in Period (Years)				
Trust Fund User Annual Bankruptcy Rate	1	5	10	15	20
1.0%	0%	2.5%	5.1%	6.8%	7.8%
1.5%	0%	3.7%	7.5%	9.9%	11.2%

*The exhibit is based on no recovery of funds from bankrupt firms, and a 2% real discount rate.

The 20-year pay-in period would allow for 7.8-11.2 percent of the closure and post-closure costs to go unfunded. This is a substantial cost for the public to bear. Considering that industry will expend millions of dollars in the coming years for proper closure and post-closure care under RCRA, and that much of this will be funded through trusts, even the unfunded payments of 2.5-3.7 percent with the 5 year period are not negligible.

It is reasonable to assume that the Agency would be able to recover some of the funds from firms that would fall into bankruptcy each year. However, it is doubtful that the Agency could recover most of the money, and in some instances recovery may take several years of litigation and considerable legal resources.

The facts in Exhibit I show a greater public burden with longer pay-in periods. Other facts, however, must be taken into account.

Effects of the Reduction of the Pay-in Period from 20 Years for Existing Facilities

A group of plants were selected from two industries believed to be typical of the type of firms that would require trust funds. The effect on these firms of shortening the pay-in period from 20 years was analyzed (Appendix D).

Exhibit II shows the results of an attempt to estimate the percentage of plants that would shut down under different pay-in periods due to the costs of compliance with the RCRA regulations. Clearly, the shorter the pay-in period, the more expensive the compliance costs are and the more plants that will close down as a result. (For the purposes of this discussion, "plant closures" refers to the shutting down of an industrial plant's operations and "site closures" refers to the closure of a hazardous waste facility as specified under the RCRA regulations.)

Exhibit II - Percentage of Plant Closures Induced by the RCRA Regulations Under Varying Pay-in Periods

	Length of Trust Fund Pay-in Period (Years)			
	1	5	10	20
Plant Closures	21.5%	13.1%	8.4%	2.8%

If the trust fund had to be fully funded immediately, more than seven times as many plant closures would result as under a 20 year pay-in period. Assuming that the results of this analysis can be applied to the general population of firms that will use trusts, it is obvious that the impact of a decision to significantly reduce the pay-in period is severe. Most importantly, most of the firms forced to close because of a reduced pay-in period may be unable to afford, or unwilling to use their remaining assets, to perform proper closure or post-closure care of their facilities. Therefore, simply reducing the pay-in period does not address the problem of unfunded site closure and post-closure care.

Some of the on-site closures predicted in the analysis might not occur because the owner or operator would switch to off-site waste management and thus avoid the need to establish a financial assurance mechanism. However, the staff was unable to ascertain how often this avoidance would be possible. Importantly, for many plants that operate hazardous waste surface impoundments, which are common in many of the manufacturing industries, this will be impossible. Also, presuming that a firm managed waste on-site because it was cheaper, a move to off-site disposal might be economically impossible. In many areas of the country off-site commercial capacity for managing hazardous waste is insufficient and therefore, in the future disposal prices for the use of off-site services may increase substantially.[16] The staff assumed, in analysis discussed below, that the percentage of plant closures under various pay-in periods would range between those in Exhibit II and half those percentages. These amounts will be referred to in the discussion that follows as the "full" induced plant closures and "half" induced plant closures for simplicity.

After analyzing the induced plant closures, the staff decided to analyze the combined effect of the bankruptcy rate and the amounts of induced plant closures.

Balancing of the Bankruptcy Rate and Induced Plant Closures

The staff looked at the combined effects of annual bankruptcy rates of 1.0-1.5 percent and the induced plant closures under varying pay-in periods to assess what portion of the trust users' closure and post-closure costs may not be paid.

Considering that only a modest amount of the funds for closure and post-closure may be recovered from firms induced to shut down because of the pay-in period and from firms failing for other reasons (those reflected in the bankruptcy rate), the staff assumed a 25 percent fund recovery rate from both types of firms. The induced closure amounts from the industry analysis mentioned in the previous segment (Exhibit II) and half those amounts, to reflect the capability of some firms to adjust and not close, were each used to discover what percentage of closure and post-closure costs would be unfunded due to induced plant closures and the bankruptcy rates. Exhibit III displays the results of the "full" induced plant closure analysis, while Exhibit IV shows those of the "half" induced closure analysis. The analyses used the same computer model as used to assess the effect of the bankruptcy rates. (Appendix C).

Exhibit III - Percentage of Total Closure and Post-Closure Costs Unfunded with "Full" Induced Plant Closures by Bankruptcy Rate, by Pay-in Period*

Annual Trust User Bankruptcy Rate	Length of Trust Fund Pay-in Period (Years)			
	1	5	10	20
1.0%	19.9%	14.0%	11.5%	8.3%
1.5%	19.7%	14.6%	13.0%	10.8%

* The exhibit is based on a 2% real discount rate.

Exhibit IV - Percentage of Total Closure and Post-Closure Costs Unfunded with "Half" Induced Plant Closures by Bankruptcy Rate, by Pay-in Period*

Annual Trust User Bankruptcy Rate	Length of Trust Fund Pay-in Period (Years)			
	1	5	10	20
1.0%	10.3%	8.1%	7.7%	7.1%
1.5%	10.2%	8.8%	9.4%	9.6%

* The exhibit is based on a 2% real discount rate.

The analysis using full plant closures indicates that an immediate pay-in period would result in the highest rate (19.7-19.9%) of unfunded closure and post-closure costs. This is due to the very large number of closures this requirement would induce. The smallest problem is caused by allowing a 20 year pay-in period--8.3 to 10.8 percent of the trust payments would go unfunded. The unfunded costs are half the amount they would be under an immediate pay-in scheme.

In Exhibit IV, however, using "half" induced plant closures, a significant change occurs. At a bankruptcy rate of 1.0 percent, again a 20 year pay-in period results in the lowest amount of unfunded costs. However, with a bankruptcy rate of 1.5 percent, a 5 year pay-in period yields the smallest percent of unfunded closure and post-closure costs (8.8 percent), although there is less than a 1 percent difference between it and a 20 year pay-in period.

Two fundamental insights are gained from looking at the forecasted ranges for the bankruptcy rate and induced closures. First, no matter how the pay-in scheme is structured, one cannot be assured that the costs of closure and post-closure care would be covered for all existing sites. At best, one can hope to maximize the funds available for these activities from trust users. Second, given the best estimates of the range of the bankruptcy rate and induced plant closures, a 5 to 20 year pay-in period ensures the availability of more funds for closure and post-closure than does an immediate pay-in scheme.

Within the ranges for estimated bankruptcies and induced closures, one cannot predict what the actual bankruptcy rate will be in the future for trust fund users and how many plants the RCRA regulations will induce to close. In addition, uncertainty inherently existed in forecasting the ranges for these two critical variables. In light of these uncertainties, the staff decided next to analyze the cost of a wrong decision in setting the pay-in period.

The Cost of a Wrong Decision on the Pay-in Period

The staff examined the cost of establishing a 5 year trust fund pay-in period coupled with the discovery that the period ought to be 20 years; the reverse situation was also examined. Considering the uncertainties of the bankruptcy rate and induced plant closures, the staff believed that the most prudent selection would be a pay-in period that would cause the least problem if it proved to be incorrect. One could adjust the pay-in period after the RCRA regulations had been in effect for a few years and benefit from the initial experience gained in administering the regulations. It was therefore important not to make a mistake that could have relatively severe consequences before it could be corrected.

The analysis of this issue was constructed using the computer model built for the earlier analysis, with the addition of the following assumptions built into the model:

- The average cost of site closure and the money required at closure for post-closure activities would be $200,000.
- About 4,350 existing waste management facilities would require trust funds under RCRA.
- A mistake would be detected and corrected in 5 years.

The first two assumptions were developed solely for illustrative purposes. Currently, the average site costs for closure and post-closure activities are not certain. However, costs will vary by the type and size of waste management facilties. The number of waste management facilities requiring trusts is also uncertain. The approximation provided here resulted from a rough assessment of the regulated community in the Draft Economic Impact Analysis for the May 19, 1980 RCRA regulations (Appendix E). The last assumption was made considering that it would take several years to collect and evaluate data, decide the Agency had made a mistake, and go through the rule-making process to correct for it.

The staff analyzed the following scenarios:

SCENARIO (1): The pay-in period is set at 5 years, because one accepts the 1.5 percent annual bankruptcy rate and the "half" induced plant closures amount. The Agency discovers that the induced plant closures is wrong -- that the number is really the amount of the "full" induced plant closures. Or, EPA discovers that both beliefs were wrong, that "full" induced plant closures was right and that the annual bankruptcy rate is 1.0 percent. EPA corrects the mistake and sets the pay-in period at 20 years. This occurs 5 years after the RCRA program's implementation.

SCENARIO (2): The pay-in period is set at 20 years, because one accepts that the annual bankruptcy rate would be 1.0 percent and that "full" induced plant closures would occur for the entire population of trust fund users. However, the Agency discovers the induced closure amount is wrong when only half the expected induced plant closures occur, and the annual bankruptcy rate is 1.5 percent. EPA corrects the mistake and sets the pay-in period at 5 years. This correction occurs 5 years after the RCRA program's implementation. Notably, if EPA discovered only that the amount of induced plant closures was wrong and that it was "half" the induced plant closures, it would still want to leave the pay-in period at 20 years. (See the discussion on Exhibit IV).

Exhibits V-VI show what happens under the two scenarios.

Exhibit V - Present Value of Additional Unfunded Closure/Post-Closure Costs Resulting From EPA's Setting a 5 Year Pay-in Period That Is Corrected to 20 Years after 5 Years - SCENARIO 1

(Millions $)

Contrary to initial beliefs the Agency discovers:

	"Full" Closures*	"Full" Closures & 1.0% Bankruptcy Rate
Unfunded Closure/Post-Closure Costs for 5 Year Pay-in	101.49	96.17
What Unfunded Closure/Post-Closure Costs Would Be If EPA Had Initiated 20 Year Pay-in	51.86	40.87
Additional Unfunded Costs in the Initial 5 Years Resulting from a Wrong Decision	49.63	55.30

* The 1.5% bankruptcy rate was right.

Exhibit VI - Present Value of Additional Unfunded Closure/Post-Closure Costs Resulting from EPA's Setting a 20 Year Pay-in Period That Is Corrected to 5 Years after 5 Years - SCENARIO 2

(Millions $)

Contrary to initial beliefs the Agency discovers:	"Half" Closures*	"Half" Closures & 1.5 Bankruptcy Rate
Unfunded Closure/Post-Closure Costs for 20 Year Pay-in	32.04	61.13
What Unfunded Closure/Post-Closure Costs Would Be If EPA Had Initiated 5 Year Pay-in	54.30	60.02
Additional Unfunded Costs in the Initial 5 Years Resulting from a Wrong Decision	Not Applicable**	1.11

* The 1.0% bankruptcy rate was right.

** In this situation, a 20 year pay-in period remains the preferable choice. See Exhibit IV.

Exhibits V and VI demonstrate that the cost of a mistake in setting a 20 year pay-in period that can be corrected is much less than that for a mistake with a 5 year pay-in period. (The same analysis was done assuming the mistake could be corrected in two years, and similar results were obtained.) It costs about $1 million to be initially wrong in setting a 20 year pay-in period. It costs between $50-$55 million in additional unfunded costs to be initially wrong in setting a 5 year pay-in period. The primary reason for this is that one cannot "bring back" the higher number of plants forced to close because of the shorter pay-in period once it is established.

Considering this stiff penalty for being wrong in establishing a 5 year pay-in period at the RCRA program's outset, one can see that setting a 5 year pay-in period would be unwise. One other important fact reinforced this position. As pointed out in the previous segment, in the case where there is an annual bankruptcy rate of 1.5 percent and "half" the induced plant closures for trust users, the 5 year pay-in period is not significantly superior to the 20 year period. Yet it was only in that instance that the 5 year period was preferable at all.

Although the analysis in this segment confirms the Agency's decision to move away from requiring a 5 year pay-in period and toward the 20 year period, another material consideration weighs against allowing a 20 year pay-in period for all existing sites.

RCRA Permit Life

In the Consolidated Permit Regulations published May 19, 1980, in the Federal Register, EPA announced that hazardous waste management facilities were not to be issued an initial permit for a period to exceed 10 years. At the end of the initial permit term, EPA would review the permittee's situation and decide whether to renew the permit, or deny a renewal and require a facility to close. However, EPA would not want to require a facility to close without being assured that the permittee's trust was fully funded. Also, the Agency would not want to be in a position where it must consider allowing a poorly managed site to remain in operation because the closure and post-closure trusts were not yet fully funded. To prevent these potential circumstances, EPA believes, as a matter of policy, that trust funds should not be allowed a pay-in period that exceeds the term of the initial permit of a hazardous waste management facility.

Pay-in Period Decision and Rationale for Existing Facilities

The Agency decided, in the final regulations for interim status (Part 265), to allow both closure and post-closure trust funds to build at a rate of 5% a year unless the remaining operating life of the site is less than 20 years. In that case, the fund would build over the life of the site. For interim status facilities which become permitted, the owner or operator must fund the balance of the trust fund over the term of the initial RCRA permit (a maximum of 10 years).

EPA believes that its decision on the trust fund pay-in period for existing hazardous waste management facilities is consistent with the overall regulatory philosophy of the interim status, Part 265 regulations. The Part 265 standards establish a set of general requirements for facilities awaiting permits that require the regulated community, during the transition period from interim status to permitted status, to undertake important, fundamental waste management practices. The Agency does not intend the requirements to be overly burdensome for the regulated community.

Recognizing, in events of premature closure, that a trust fund mechanism will not provide complete financial assurance of closure and post-closure care, the Agency is currently studying a variety of private sector and governmental programs, including mutual and pooled fund approaches. The Agency will probably request legislation from Congress on these subjects. If a legislative, administrative, or private sector remedy to the problems of premature closure does not evolve, EPA will review the present trust fund mechanism and actual program experience, and reconsider the pay-in period's length.

NEW HAZARDOUS WASTE MANAGEMENT FACILITIES

Owners and operators of new hazardous waste management facilities will be required to provide financial assurance for closure and post-closure activities in accordance with the final Part 264 requirements only. However, when compared with existing facilities, one unique and important aspect for post-RCRA facilities exists for trust fund users that are building new facilities -- new facilities will be built in conformance with current technical standards.

A Comparison of New and Existing Facilities

New hazardous waste management facilities present the same potential for premature closure during the trust fund pay-in period that was discussed above for existing facilities. Again, an apparent simple solution is to require full funding up front, particularly since the Agency need not be concerned about closures of new facilities induced by too stringent a pay-in requirement, as is the case with existing facilities. A decision for immediate full funding would, however, create a significant differential in the burden of RCRA regulatory compliance between new and existing facilities where owners and operators need to use trusts to meet the financial requirements. Shorter pay-in periods lead to greater tax costs, opportunity costs of capital and problems of capital availability than do longer pay-in periods, all of which will be of special concern to owners and operators of new facilities.

The Agency believes it could be counterproductive to establish an immediate pay-in requirement for new facilities, particularly in that existing facilities are allowed to build trusts over time. This differential would encourage the continued use of existing facilities while discouraging the development of new facilities conforming to current technical standards. Existing facilities were not built under the environmentally protective Part 264 technical standards that EPA is establishing, and they may not be upgraded in the permit process for many years. Conversely, new facilities will be built in conformance with the new technical standards. In the near future--a period of transition in which the nation needs to implement better hazardous waste management practices--the Agency seeks to encourage the building of new, better treatment facilities to replace old capacity. An immediate pay-in requirement for trusts would not be consistent with this objective.

Pay-in Period Decision and Rationale for New Facilities

Having considered these factors, the Agency has decided to require that trust funds for new facilities be built over the life of the initial permit. This allowance for new facilities will significantly reduce the cost of the trusts when compared with an upfront pay-in scheme, thus significantly reducing the overall RCRA compliance cost, of which the trusts are a substantial part. This decision removes a large disincentive for building new facilities.

Again, recognizing that some closure and post-closure costs will be borne by the public regardless of the pay-in period, the Agency is studying a variety of private sector and governmental programs to deal with premature closures. EPA believes that using a mechanism such as a public fund to handle unfunded closures and post-closure activities is more appropriate. The Agency plans to devise an approach it can recommend to Congress in the near future.

- Some commenters suggested that notice of non-payment to the trust fund should be sent to the owner or operator as well as to the Regional Administrator, reasoning that an expensive, long-term mechanism like the trust fund should not be dismantled, and closure ordered, if payments were late for reasons beyond the control of the owner or operator. Other commenters suggested that notice by the trustee to the Agency should be made within five business days.

EPA agrees that notice of non-payment should be sent to the owner or operator as well as to the Regional Administrator. However, it remains the responsibility of the owner of operator to make payments in a timely fashion, as they will be recurring, annual obligations for which the owner or operator should be able to plan ahead.

The Agency also believes that there should be a change in the time requirement for notice of non-payment, although the change was to increase the number of days allowed, rather than to refer to business days.

- Many commenters said there should be clarification as to who is responsible for determining the amount of payments to the trust. Commenters also said the trustee should not be responsible for determining the amount or adequacy of the payment, or for enforcing payment to the trust.

The Agency intended that the owner or operator be responsible for determining the amount of the payment, and that the trustee would be responsible for notifying the Regional Administrator when payment was not made to the fund. An annual statement of the value of the trust assets will be sent to the owner or operator by the trustee before the payment is due. However, it will be the owner or operator's responsibility to perform the calculation regarding the amount of the adjusted cost estimate, the value of the fund, and the amount of the next payment. The trustee is not required to determine the amount or adequacy of the payment, or to enforce payment to the trust fund.

- A few commenters believed that if a trust fund is established after the owner or operator had initially used another instrument, the amount deposited in the trust should be paid-in over the remaining life of the site or some other period, rather than in a lump-sum.

The Agency has determined that it cannot accept the risk that would be presented if the pay-in period began whenever a switch was made to the trust fund instrument. If the change is the owner's or operator's choice, he should be able to provide the necessary funds. If he is not able to do so, it would indicate exactly the situation the Agency must avoid--lack of adequate financial assurance for the proper closure and post-closure care of the hazardous waste management facility. However, the owner or operator who changes to a trust fund will have the time remaining in the pay-in period to bring the value of the trust up to the amount of the cost estimate, as long as the first payment is in the amount the trust fund would otherwise contain if the trust fund had been established on the effective date of the regulations.

Final Regulation. The final regulation provides that payments to the trust fund will be made in cash or securities that are acceptable to the trustee. No securities or other obligations of the owner or operator, unless it is the Federal or a State government, will be permitted as payments or investments.

Owners or operators of existing facilities will have the shorter of 20 years or the remaining operating life of the facilities, as estimated in the closure plan, to fund the trust fund. When an existing facilities receives a permit, the owner or operator must fund the remaining obligation over the term of the initial RCRA permit.

Owners or operators who use a trust fund to demonstrate financial assurance for new facilities must make payments to the trust fund over the term of the initial RCRA permit.

If the owner or operator switches to a trust fund mechanism after using another instrument, the initial payment must be at least equal to the sum that would have been paid in the trust if, for an existing facility, it had been established on the effective date of the Part 265 regulations or, for a new facility, it had been established at least 60 days before the date on which hazardous wastes were first received at the facility.

Adjustments to the value of the trust fund must be made, in any case, during the operating life of the facility to account for any changes in the cost estimate or the value of the trust fund.

5. Comments on Payments from the Trust Fund

Reproposed Regulation and Rationale. The originally proposed regulation only allowed reimbursement from the closure trust fund after the closure activities were completed. Post-closure expenses could be reimbursed once a year, as long as an itemized list of incurred costs was presented to the Regional Administrator and he found them in accordance with the approved plan or otherwise justified. The reproposed regulation allowed owners or operators to be reimbursed for closure expenses before closure was completed, as follows: if the Regional Administrator determined that bills for closure were in accordance with the closure plan or were otherwise justified, he would approve the bills and forward them to the trustee, who would pay the bills as long as the trustee determined that the amount remaining in the fund allocated for closure of the facility would be at least 20 percent of such amount before any closure bills were paid.

The Agency believed that retaining 20 percent provided a significant level of financial assurance until closure was completed. Reimbursements for post-closure expenses would be made in the same manner as post-closure activities were performed, although there was not a retention of 20% of the trust assets until the post-closure period was completed.

In all cases where the owner or operator applied to the Regional Administrator for release of excess funds, the Regional Administrator had 30 days to direct the trustee to release excess funds, unless he found that the cost estimate was not prepared and adjusted in accordance with the applicable regulations.

Comments and Responses. The comments made to the Agency on the pay-out provisions of the trust fund were as follows:

- Language on the pay-out provisions should be clarified, especially regarding the trustee's actions.
- Perhaps the Agency should require that three bids be made for performance of closure activities so funds would be less likely to be depleted before all closure activities were performed.
- It should be clarified that the refund of excess amounts is a possibility, and not a requirement, since the owner or operator may want to keep the funds in the trust to reduce future payments.

For clarity, the Agency has rewritten some of the language on payments out of the trust fund. The trustee will act at the direction of the Regional Administrator in making payments from the trust fund. Payments generally will be made in the same manner as the reproposal stipulated.

In the event that a person other than the owner or operator is directed or authorized to perform closure or post-closure care as a result of a judicial proceeding instituted under Sections 3008, 7002, or 7003 of RCRA, the Regional Administrator will authorize the trustee to make reimbursements to that person for closure and post-closure expenditures. When the value of the closure trust fund reaches 20 percent of the amount allocated for the closure activities, the trustee will notify the Regional Administrator, and further reimbursements will not be made for closure expenditures until closure is completed, unless the Regional Administrator directs the trustee to make further reimbursements.

EPA will not require that bids be made on closure activities, as it believes owners or operators of most facilities should be able to make reliable estimates of the costs of closure and post-closure activities. To impose this requirement would constitute an unnecessary burden on the owner or operator, especially since the owner or operator may obtain such bids if he so chooses.

The Agency believes the final regulations are clear in stating that the owner or operator may request the Regional Administrator to authorize the release of excess funds from the trust fund.

The time allowed for the Regional Administrator to act on requests for refunds from the trust during the operating life of the facility has been increased to 60 days. The Agency believes that its Regional personnel may be faced with a considerable influx of communications regarding the individual financial mechanisms, in addition to the efforts required during the transition from interim to permitted status, and the longer period will remove some administrative pressure from EPA staff.

Final Regulation. The final regulation is essentially the same as the reproposed regulation regarding payments made from the trust fund for closure and post-closure expenditures. The owner or operator will submit itemized bills for closure or post-closure activities to the

Regional Administrator. If the Regional Administrator determines that the bills are in accordance with the plans or otherwise justified, the Regional Administrator will direct the trustee, within 60 days of the submittal, to reimburse the owner or operator in those amounts. When reimbursements decrease the size of the closure trust fund to 20 percent of the amount that was allocated for closure of the facility, the trustee will notify the Regional Administrator and will not make further reimbursements until he is so directed. There is no such restriction on reimbursements for post-closure expenditures. The same procedure will be followed when reimbursements are made to individuals other than the owner or operator who are directed or authorized as a result of a judicial procedure instituted under Sections 3008, 7002, or 7003 of RCRA to perform closure or post-closure activities.

E. Surety Bonds

Reproposed Regulation and Rationale. The reproposed regulation gave owners and operators of hazardous waste management facilities the option to purchase surety bonds in the amount of the cost estimates to meet the requirements for financial assurance for closure and post-closure care. Three types of surety bonds were allowed in the reproposal. They guaranteed performance of closure, payment of a lump sum into a post-closure trust fund at the time of closure, or performance of post-closure care. The lump-sum option was allowed for post-closure care after the Agency determined that sureties would be extremely reluctant to write bonds guaranteeing performance of any activity for a 30-year term.

The main provisions in the bond regulation and standard bond forms were:

- Sureties writing the bonds had to be certified by the U.S. Department of the Treasury in Circular 570, "Surety Companies Acceptable on Federal Bonds." This list includes almost 300 companies, and is under continuous review. The use of Circular 570 relieves the Agency of the burden of evaluating sureties. Certification is a minimum criterion; the Agency reserves the right to require further qualification of sureties.
- Once closure activities began, or were ordered to begin, the bond coverage had to continue until the obligation guaranteed was completed. This provision was considered necessary to prevent the surety from cancelling the bond when coverage is needed most, i.e., when the owner or operator is in financial trouble, when the facility is not meeting the technical requirements of the permit, or when the date of closure is approaching.

- A cancellation clause allowed the surety to cancel a bond with 90 days' notice to the owner or operator and EPA. The regulation allowed the owner or operator 30 days to obtain other financial assurance, thus leaving the Agency 60 days during which it could order closure if financial assurance was not restored. If closure was ordered, in accordance with the previous provision the surety would remain liable on the bond until all obligations were met. The owner or operator could cancel a bond upon 30 days' notice to the surety, but only after demonstrating other financial assurance to the Regional Administrator.
- If a surety was determined to be liable on a performance bond guaranteeing closure or post-closure care, it could choose between two options. First, it could arrange for closure or post-closure care to be performed. If the surety did not choose to perform the activities covered by the bond, it had to pay the penal sum of the bond into an escrow account or trust fund as directed by the Regional Administrator. Allowing this choice between performance or payment on the part of the surety is standard practice.

Comments and Responses. EPA received several comments on the surety bond provisions.

- Closure and post-closure obligations cannot be met with surety bonds. Only through a direct cash payment by an owner or operator equal to the entire amount of the estimated closure cost of the facility into a trust fund on the effective date of the regulations can these long-term financial assurances be provided. In the case of post-closure care, owners or operators of disposal facilities should be required to deposit the estimated cost of post-closure monitoring and maintenance into a trust fund during the operating life of the facility.

EPA disagrees with this comment. The Agency believes that surety bonding is a viable option. This conclusion was reached after consultation with representatives of industry trade associations, analysis of the mechanics of surety bonds under the conditions that will apply during both interim and general status, and a review of existing State hazardous waste programs as well as similar governmental programs that require or permit the use of surety bonds.

An advantage of surety bonds is that, for some owners and operators, their cost may be lower than that of the trust funds. Owners and operators do not have to commit large sums of capital for long periods, although they of course remain liable for the eventual cost of closure or post-closure care.

Another advantage is that surety bonds not only provide full indemnification in the financial sense but also, in the case of performance bonds as allowed under Part 264, establish a responsible party to arrange for performance of the required work in the absence of the owner or operator.

The sureties are likely to meet their obligations fully and in a timely manner, since the Treasury Department may decertify a surety from Circular 570 for failure to pay or perform as required[17]. Because government contractors are major purchasers of surety bonds, and are prohibited from conducting business with sureties which are not certified, it is likely that decertification will result in lost business to the surety, which is obviously a strong incentive to retain certification. The final surety bond regulations for interim and general status are written so that, once a facility is properly bonded, either the owner or operator or the surety must assume responsibility for funding the standby trust or performing closure or post-closure care. Because a responsible party will at all times be liable for complying with this regulation, EPA has determined that surety bonds meet the standard of providing financial assurance for closing hazardous waste management facilities, and for monitoring and maintaining them during the post-closure period.

- If EPA allows the use of surety bonds to guarantee the closure and post-closure maintenance of hazardous waste disposal facilities, owners and operators will be encouraged to default on those bonds before they are forced to use their own funds. There is no incentive for them to set aside the funds necessary to meet their obligations, when they know that the surety company is legally bound to assume their liabilities.

The fact that the surety will meet the obligations takes care of EPA's main concern. Nevertheless, EPA does not agree with this statement. Owners or operators who are able to obtain bonds guaranteeing that they will carry out their closure or post-closure responsibilities are unlikely to force EPA to call in their bonds for several reasons.

Surety companies are extraordinarily selective in their choice of clients. A surety typically strives to reduce its risk exposure to zero. It is unlikely that any but financially sound and responsible corporations will be able to obtain these bonds for hazardous waste disposal.[18],[22] In addition, sureties have indicated that they may in some cases require collateral amounting to 100% of the penal sum or even more.[19] If a bonded owner or operator were to default, he would forfeit that collateral to the surety. Also, an owner or operator who defaults on a bond may find it difficult to obtain any form of third-party financial guarantee in the future.

- A surety association executive commented that a performance bond which gives a surety the option of performing closure or forfeiting the penal sum of the bond is preferable from the sureties' viewpoint to a financial guarantee bond which guarantees only that the owner or operator will have in his possession at the required time sufficient funds to perform closure. Frequently the surety finds that performing the work guaranteed by the bond is less costly than forfeiting the entire penal sum. For example, sureties which have bonded surface (strip) coal mining operations under the Department of the Interior's surface mine reclamation regulations are, as they gain experience in the field, discovering that it is often less costly for them to contract out the work themselves, should a mine operator default. The sureties thus prefer that the performance option be retained in the final regulation.

- A government surety specialist advised strongly against EPA's inclusion of the performance option in bonds written under interim status standards. During interim status many closure and post-closure plans will not be closely examined by EPA until shortly before closure. At that time, the plans may be significantly altered. Such changes might be interpreted as material alterations of the bonding contract. Unless consent of the surety is obtained for such changes the surety might be able to present a successful legal defense against liability on the bond; material alteration of the work requirements of a performance bond is in fact one of the few legally valid defenses against liability. Therefore, EPA should not allow performance bonds to be written during the interim status phase of permitting, and may not wish to allow them under the general status regulation either.[17]

EPA agrees that in some cases a surety may wish to accept responsibility for closing a facility instead of paying the penal sum into a trust fund. Surety bonds which guarantee performance of activities such as construction, land reclamation and oil spill cleanups are common, but each clearly specifies, at the time the bond is written, the nature and extent of the performance guaranteed by the surety. During interim status, however, some closure and post-closure plans may not be closely examined by the Regional Offices until shortly before closure. At that time, it is possible that the Regional Administrator may determine that the plans require changes which might affect both the cost and type of work required. The actual required performance for the particular facility therefore may not be specified in any detail during most of the term of the bond.

Consequently, in the final regulations for interim status only surety bonds that guarantee payment into standby trust funds for closure and post-closure care are allowed. In the general standards, performance as well as financial guarantee bonds are allowed since the closure and post-closure plans will be reviewed as part of the permitting process.

- Several sureties suggested that EPA is creating an "impossible" situation for them by requiring bonds which remain in effect during the entire operating life of the facility. A 30-year post-closure bond would be even riskier. Unlike an insurance company, a surety expects to suffer no losses, so bonds will not be readily available for what is perceived to be an inherently risk-prone industry, especially since the cancellation clause does not allow the surety to get off a risk easily. Only after the RCRA regulations have been in effect for 20, 30, or even 40 years will sureties be able to properly assess the risks.

- Several commenters indicated that EPA's requirement that an increase in the cost estimate be reflected in the facility's financial assurance mechanism within 30 days would increase the surety's "exposure" and decrease the likelihood that bonds would be available. A surety prefers to write a bond for a fixed penal sum, or at least have some idea of the eventual size of the bond. One commenter noted that "No business judgments can be made since bond amounts can be increased arbitrarily."

EPA understands that some of the provisions it requires to be in bonds written for hazardous waste management facilities may not be entirely consistent with the current bond-writing practices of the surety industry, and may discourage sureties from writing the bonds at this time. Long-term coverage must be provided, however, since closure or post-closure costs may not be incurred for up to twenty years or more. Continuous coverage of anticipated obligations is required by the regulations, but could not be guaranteed if a surety were permitted to avoid liability simply by cancelling a bond or allowing it to expire regardless of whether the owner or operator had provided another form of financial assurance to take its place. It is likely that such cancellation would come at a time when coverage is essential; for example, when a facility is approaching financial insolvency or is having difficulty complying with the technical requirements of the permit.

In the final regulation, the surety must provide at least 90 days' notice to the owner or operator and EPA prior to cancellation. Upon receiving a cancellation notice, the Regional Administrator will consider the owner or operator to be in violation of the financial assurance regulations, and will issue a compliance order pursuant to Section 3008 of RCRA. If the owner or operator cannot demonstrate to the Regional Administrator alternate financial assurance within 30 days of issuance of the compliance order, the Regional Administrator may direct the surety to place the penal sum of the bond in the standby trust fund. EPA is encouraged by the fact that solid waste disposal facilities permitted under State programs have been able to obtain bonds with similarly strict provisions for guaranteeing continuity of financial responsibility.[20,21]

The requirement that financial assurance increase as the cost estimates increase is also necessary for adequacy of financial assurance, and cannot be substantively changed. This requirement is applicable to all financial assurance mechanisms. The surety bond language in the final regulation includes an optional rider by which the owner or operator and surety agree to adjust the penal sum of the bond yearly so that it equals the adjusted cost estimate, provided that the increase is no more than 20 percent and no decrease takes place without the written consent of the Regional Administrator. Inclusion of such a provision would help assure that the bond will continue to provide for coverage of the full cost estimate. The owner or operator may find such a provision advantageous and convenient since it allows for adjustment of the penal sum within a range mutually acceptable to him and the surety.

The Agency realizes that during the next several years it is likely that only the sureties' favored clients may be able to obtain bonds for their facilities, but it believes that as sureties' experience with hazardous waste facilities increases, bonds may become more readily available, especially for those facilities with RCRA permits.

- EPA's proposed standard bond forms are confusing, excessively complex, and contain language and references to the regulations which could be misconstrued. A bond form is a formal agreement by which a surety agrees to assume a principal's (owner's or operator's) obligation to an obligee (EPA) to meet the terms of an underlying contract (the regulations). It should be kept as simple as possible.

After examining numerous bond forms, several of which were written specifically for hazardous or solid waste disposal facilities, EPA has determined that its proposed bond forms were indeed overly complex and subject to misinterpretation. The text of the revised bond forms avoids unnecessary duplication of the language of the regulations by eschewing the detailed discussion of the actions required of the surety, principal, and obligee under various contingencies, which the proposed bond forms contained. This change should minimize the possibility that the language of the bond itself could be used to subvert the intent of the financial responsibility regulation[17]. Individual forms have been written for closure and post-closure financial guarantee bonds, which may be used during both interim and permitted status, and for closure and post-closure performance bonds, which may be used only by permitted facilities. The surety and the owner or operator are required to certify that the EPA standard language has been used when it writes a bond.

- Sureties expressed concern that an issuer of a bond for closure or post-closure activities might be held responsible for third-party damages resulting from some aspect of the facility's operation not related to the closure or post-closure guarantee. Even if such incidents are covered by a separate liability policy it is conceivable that if the regulations are written into the bond form, the surety might still be held liable.

The Agency believes that the extent of a surety's liability on a closure or post-closure bond is made clear both in the regulations and on the form itself, and is explicitly limited to the stated guarantees.

Final Regulation. EPA has changed several provisions of its surety bond regulation in response to comments and as a result of its own research.

The final regulation for interim status allows owners or operators to obtain financial guarantee bonds which guarantee payment of the penal sum into a standby trust fund. The penal sum must be in the full amount of the estimated closure (§265.143(b)) or post-closure (§265.145(b)) costs, unless part of these costs are covered by other allowed mechanisms.

The final general standard also allows owners or operators to obtain financial guarantee bonds which guarantee funds for closure (§264.143(b)) or post-closure (§264.145(b)) costs, or to obtain surety bonds which guarantee the performance of facility closure (§264.143(c)) or post-closure monitoring and maintenance (§264.145(c)).

Some of the key provisions of the reproposed regulation remain intact. Significant modifications include the requirement that the owner or operator must establish a standby trust fund to receive funds to be paid by himself or the surety. Also, if the owner or operator chooses a financial guarantee bond for closure, he must fund the standby trust fund at least 60 days before closure is scheduled to begin. If a post-closure financial guarantee bond is chosen, the owner or operator must fund the standby trust fund by the time closure begins. The closure and post-closure financial guarantee bonds must guarantee that the owner or operator will fund the standby trust fund within 15 days in the event that closure is ordered by the Regional Administrator or a U.S. district court, pursuant to Sections 3008, 7002, or 7003 of RCRA, or within 15 days of a notice of termination of the facility's operating permit or interim status. If the owner or operator fails to perform as guaranteed, the surety must deposit funds in the amount of the penal sum into the standby trust. If the owner or operator fails to perform the activities guaranteed by a closure or post-closure performance bond, the surety must perform in his stead, or deposit the penal sum into the standby trust fund.

In addition, the surety must provide at least 90 days' notice of its intention to cancel a bond to the Regional Administrator and the owner or operator. Upon receiving such a notice, the Regional Administrator will consider the owner or operator to be in violation of the financial assurance regulation and will issue a compliance order pursuant to Section 3008 of RCRA. If the owner or operator cannot demonstrate to the Regional Administrator alternate financial assurance within 30 days of issuance of the compliance order, the Regional Administrator may direct the surety to place the penal sum of the bond in the standby trust fund. The latter change was made so that financial assurance can be maintained without the need to require closure. In all cases, a bond cannot be cancelled if a compliance procedure is pending.

Finally, if the adjusted closure or post-closure cost estimate increases beyond the penal sum of the bond, the owner or operator must, within 60 days, increase the penal sum accordingly or obtain other financial assurance.

The surety and owner or operator may elect to attach to the bond form a rider for adjustments of the penalty amount to the adjusted cost estimate provided that increases do not exceed 20 percent and decreases take place only with the Regional Administrator's approval.

F. Letters of Credit

A letter of credit is an instrument by which the credit of one party, whose financial standing is considered more desirable than that of a second party, is extended to a third party. These three parties to a letter of credit are the account party, or customer, who is the applicant requesting the issuance of a letter of credit; the issuer, who is the entity undertaking the obligation of the account party; and the beneficiary, who is the party in whose favor the credit is issued. Accordingly, for the purposes of these regulations, the owner or operator will be the account party, the bank or financial institution, as defined in the Subpart H regulations, will be the issuer, and the EPA, through its Regional Administrators, will be the beneficiary.

The letter of credit specified in these regulations is irrevocable for one year periods; no terms or conditions may be changed during this time without the consent of the parties to the letter of credit.

The issuer is responsible for accepting drafts and documents presented in accordance with the terms of the credit and is not concerned with any other arrangements which may exist between the owner or operator and the EPA.[23]

Establishment of the letter of credit is considered to take place at the time of receipt by the beneficiary of the issuing institution's terms and conditions as set forth in the letter of credit.[24]

1. Suitability of Letters of Credit for Purposes of These Regulations.

Reproposed Regulation and Rationale. The original proposal did not allow letters of credit as a method for demonstrating financial assurance for closure and post-closure care. The reproposed regulation authorized letters of credit as a means of assuring funds for closure, for a lump-sum payment at the time of closure for post-closure care, and for care over the post-closure period. The Agency included letters of credit in the reproposal because it learned that they could be written so that they could not be cancelled on short notice. The Agency believed that irrevocable standby letters of credit would be reliable instruments that have the additional advantage of relatively lower costs than trust funds, although availability is generally limited to highly credit-worthy customers of the issuer.

Comments and Responses. EPA received the following general comments regarding letters of credit as appropriate financial instruments:

- Letters of credit will not be viable mechanisms because it is rare that they would be issued for the long terms EPA contemplates; they are too expensive for the smaller owners and operators; they are a liability on the bank's books; and financial institutions will be reluctant to issue them because EPA can draw on them if they are cancelled.

- Even if they are issued for long terms, letters of credit interject an element of uncertainty in a firm's financial projections, cause a use of funds that reduces their utility, and could inhibit a company's ability to borrow at present, even though closure and post-closure will not occur for years.

- Letters of credit do not provide continuous assurance when they are issued for yearly periods. It will be difficult to get continuous coverage, since the credit amount will vary as the cost estimates change. The banks may not pay when drafts are presented.

- Other commenters said the proposal to allow letters of credit is feasible and would have their support, since they ensure adequate funds, yet allow well established, responsible companies to avoid needlessly tying up large sums of money. They would be useful for temporary coverage or in combination with other mechanisms.

- Even if letters of credit are not widely available, they should be authorized in order to encourage their development and implementation. They should only be rejected if they won't demonstrate secure financial assurance.

The Agency recognizes that letters of credit may not be available to all owners or operators, especially on an unsecured basis. However, they remain as an option since they will be available to some, may reduce the cost of compliance for those who can obtain them, and provide satisfactory financial assurance in EPA's view. The long time periods for the letters of credit are necessary in order that some continuity of assurance is provided. Letters of credit can be issued for one-year periods with automatic renewals. The length of the letters of credit is discussed in further detail below.

While there will be collateral requirements in some cases, in addition to yearly fees, the Agency continues to believe that the letter of credit will be helpful to owners and operators who can obtain them, since they involve costs that may be lower than those for trust funds. The fee structure and collateral requirements are proprietary information and vary from institution to institution. However, commenters indicate that fees may vary from one-half of one percent to three percent of the face value of the letter of credit, and collateral requirements may vary from none to full collateralization. The issuing institution performs an analysis of the business to whom they are issuing the letter of credit, and based on the institution's assessment of the financial strength and customer standing of the firm, as well as the risk involved, determines the amount of the fee and collateral.

It is possible that smaller firms with good credit standings will be able to obtain letters of credit. While credits are contingent liabilities on the bank's books, as are any loans, the issuing institution decides what risks it is willing to assume.

Some commenters from the financial community expressed concern about the ability of the Regional Administrator to draw on the credit once notice of nonrenewal is sent; others were not so concerned, even suggesting language to clarify the ability to draw on the credit after nonrenewal notice is sent.[25]

The fees and possible collateral requirements may or may not result in higher costs than the other instruments, and it is possible that a letter of credit may inhibit the borrowing abilities of the owner or operator. However, the owner or operator may choose from any of the authorized instruments after taking into consideration their advantages and disadvantages in particular situations.

The underlying purpose of using letters of credit as a financial assurance mechanism is for the issuing institution to assure that funds for closure or post-closure will be available when needed; the issuer assumes the risk of bankruptcy or failure to pay on the part of the owner or operator. As long as the proper documents are presented, the issuing institution will pay the amount stated in the sight draft, up to the full amount of the credit.

The credits are in effect for at least one year periods. If the Regional Administrator receives a notice of nonrenewal, a compliance order will be issued pursuant to Section 3008 of RCRA. If the owner or operator does not secure another authorized instrument to demonstrate financial assurance as required by the regulations within 30 days of issuance of the compliance order, the Regional Administrator may draw on the letter of credit. In addition, due to the requirements of the Section 3008 hearing procedures, the final regulations require that the term of the letter of credit continue until any compliance procedure is completed. Provisions for changing the amount of the credit and assuring continuous coverage are discussed later in this Background Document.

The provision in the reproposal for a letter of credit assuring a lump-sum payment at the time of closure for post-closure care is not in the final regulation. Under the reproposal, the lump-sum payment would have been made to a trust fund. With a letter of credit, an underlying contract between the issuing institution and the owner or operator defines their respective obligations. This contract could be used to assure the issuing institution that the owner or operator intends to terminate the post-closure letter of credit and establish a trust fund at the time of closure. This does not differ significantly from the option any owner or operator has to establish a trust fund at any time to demonstrate financial assurance. Therefore, the regulatory provision for this use of a letter of credit was deleted.

EPA believes availability of letters of credit will increase as the issuing institutions and owners or operators become more familiar with their use for the purposes of providing financial assurance for the closure and post-closure costs of hazardous waste management facilities, particularly since letters of credit provide the necessary level of assurance without undue administrative burden.

Final Regulation. The Agency continues to allow letters of credit as means of establishing financial assurance for closure and for care over the post-closure period. As described below, the regulations and the standard language for the credits have been modified in response to several of the comments.

2. Comments on Who Should be Authorized to Issue Letters of Credit.

Reproposed Regulation and Rationale. The reproposed regulation authorized any bank which is a member of the Federal Reserve System (FRS) to issue the letters of credit. The Agency believed at that time that only those banks that were members of the FRS could issue letters of credit for periods longer than a year, and that such banks would be more financially stable than those that were not members of the FRS.

Comments and Responses. The comments EPA received regarding who should be authorized to issue letters of credit were as follows:

- Banks other than those that are FRS members can issue credits for more than one year. Failing banks have been members of the FRS; FRS membership doesn't necessarily imply financial strength; nor non-membership, financial weakness. National vs. State banks might be a better distinction since national banks generally have broader powers, higher lending limits, and have to abide by Regulation H.
- The distinction of who should issue should be made on the basis of assets of the bank.
- Limitation to FRS members would eliminate savings and loans, some of which can issue credits.
- Any entity can issue a letter of credit.

The Agency learned that banks that can issue letters of credit for more than one year are not limited to FRS members.[26] The Agency also believes that distinguishing between national and state banks on the basis of legal lending limits would unnecessarily restrict the availability of this instrument. The total amount of the letters of credit issued by a bank must be under its legal lending limit. However, one commenter who has broad experience with letters of credit said if a bank issues a letter of credit that exceeds its lending limit, a drawing by EPA would be enforceable nonetheless.[27]

Regulation H (12 CFR 208) was issued by the FRS and covers general factors to be evaluated should the bank wish to become a FRS member, in addition to treatment of letters of credit. Regulation H requires that the credits be treated as ordinary loans, which invites more scrutiny of the credit, particularly as to the legal lending limit requirement. In and of itself, however, the requirement does not necessarily provide better protection for the Agency or the owners or operators. Letters of credit may be issued by any national bank, and by any State bank that has the explicit authority to do so.

As was the case with authorized trustees, the Agency believes that the issuing institution should be subject to some type of regulation and examination. Requiring such appropriate regulation and examination will help assure an acceptable level of safety and soundness for the financial operations of the issuing institution and for the interests of the parties to the letter of credit instrument.

The Agency believes a determination of issuing institutions based on the amount of their assets would indicate little more than relative size, and that other distinctions are more important. Some savings and loans can issue letters of credit, and should logically be able to do so for the purposes of the Subpart H regulations. The Agency will not, however, allow nonfinancial institutions to issue the credits; to do so would impose a tremendous administrative burden on the Agency in examining their financial standing, attempting to determine which of those institutions would be able to provide adequate assurance that they themselves would not go bankrupt and reviewing their ability to conform with letter of credit practices.

Final Regulation. The final regulation authorizes any bank or financial institution with the authority to issue letters of credit, and whose letter of credit operations are regulated and examined by a Federal or State agency to issue letters of credit for the purposes of the Subpart H regulations.

3. Objections to the Letter of Credit Form.

Reproposed Regulation and Rationale. The reproposed regulation included a standard letter of credit form in the Appendix in order to ease the administrative burden to the Agency, the issuing institution and the owner or operator. The standard form provided for identification of the facility, the amount for closure and/or post-closure costs to be covered by the credit, a purpose clause, and provisions for drawing on the credit, depositing the amount of the draft in an interest-bearing escrow account, and renewing the credit. The form also called for the credit to follow the Uniform Commercial Code (UCC) and the Uniform Customs and Practice (UCP) for Documentary Letters of Credit. EPA believed a standard form would ease the time and effort required to obtain a letter of credit since all terms are set out and only minor additional information would be required. In addition, it would not require an excessive amount of time on EPA's part to review the instruments.

Comments and Responses. Commenters suggested several changes in the standard letter of credit form, as follows:

- o Reference to the regulations do not belong in the form since they constitute superflous detail, which the UCC and UCP authorize ignoring. Their inclusion speaks to the legal concept of a guaranty, which creates inconsistent legal approaches.
- o The purpose clause is of no concern to the bank; it speaks to matters between the owner or operator and the EPA and, therefore should be covered in whatever contractual arrangements exist between those parties.
- o The check-off for coverage of closure, a lump-sum for post-closure, or funding during post-closure is confusing and doesn't stipulate amounts for each activity. Some commenters said the form should

not allow a listing of the amounts for each facility and each purpose if more than one facility and activity were covered by the instrument; others said it was possible to do so and was not too far from the usual practice involved with documentary letters of credit.

- The letter of credit should be on the letterhead of the issuing bank.

Based on the numerous comments it sought and received from the financial community and others, the Agency learned that some of the language of the form in the reproposed Subpart H regulations was confusing or not in keeping with standard letter of credit practice. References to the regulations that are not necessary or appropriate have been removed. The purpose clause of the letter of credit has been modified, in accordance with comments from the financial community, and is now generally included in the statement necessary, along with the sight draft, to draw on the letter of credit. The form has been rewritten so the amounts for closure and/or post-closure care of each facility are clearly stated. Although some commenters indicated this should not be included, such specification is necessary since EPA anticipates that many owners or operators who can secure letters of credit will cover several facilities and both closure and post-closure activities with the instrument. With the amounts clearly specified, any drawings will not exceed the level of financial assurance provided by the letter of credit for each facility and activity.

The Agency decided that letters of credit must include a statement certifying that the wording of the instrument is identical to the wording set forth in the regulations. This is necessary to avoid an additional administrative burden that would occur if EPA staff had to examine each letter of credit to make sure it contained all the necessary terms and conditions.

- Many commenters said the language triggering a payment by the issuing institution was far too complicated. Commenters said the wording of that statement should be included in the letter of credit itself.
- The reference to the escrow was not in keeping with standard practice; it should be prepared and signed separately. The interest rate for the escrow should be stipulated. Some commenters said it would not be possible for them to make a payment to an escrow, others said it would be. Some commenters said EPA will have to check to make sure the funds go to the right fund.
- The termination clause is unnecessary. For termination of the letter of credit, it is only necessary that the beneficiary return the original letter of credit to the bank, along with a written statement of that intention; consent of the owner or operator is not necessary.

Again, the Agency has relied on information supplied by commenters from the financial and legal communities. The language necessary to draw on the letter of credit has been simplified and placed appropriately in the instrument.

The Agency decided that escrows would not serve its purpose as well as trust funds (see Section M). Instead, reference to the standby trust fund is included in the letter of credit form. The reference to the trust fund must be included in the form because of the need for a depository mechanism for funds payable to the Regional Administrator (see Section C). It is a condition of the credit that while the Regional Administrator is the one who must request the payment, the issuing institution will deposit the amount of the draft promptly and directly into the owner's or operator's standby trust fund. Commenters advised that, in practice, when many letters of credit are drawn on, the draft is not presented in person and the funds are often deposited from one account to another in that same institution or another institution.[28]

Based on information supplied by commenters, the regulations have been rewritten to provide that the Regional Administrator will return the letter of credit, along with a written statement that termination is requested, when the instrument is no longer required in order to demonstrate financial assurance. The standard language for the letter of credit no longer includes a termination clause, in keeping with normal practice for this instrument.

- Commenters said reference to the UCC or UCP does not belong in the form, that the Comptroller of the Currency ruled that only one or the other must be followed.
- Commenters said the instructions to send the form to the Regional Administrators do not belong in the form.
- One commenter said there should be language to the effect that all banking charges other than those of the issuing bank should be charged to the beneficiary.
- One commenter said the credit should be non-assignable and non-negotiable.

In the commenters collective opinion, Article 5 of the Uniform Commercial Code (UCC) is a complex guide for the practice of letters of credit, often causing the credits to be more expensive since an attorney must review each one before it is issued.[29] Most felt the Uniform Customs and Practice for Documentary Letters of Credit (UCP), published by the International Chamber of Commerce, is the preferred guide. However, the Agency decided that issuing institutions may follow the UCC or the UCP. They must indicate which guide will be followed in the instrument, which is standard practice.

The regulations have been modified so the owner or operator must see that the properly executed letter of credit is delivered by certified mail to the appropriate Regional Administrator, rather than including this direction in the letter of credit itself.

The comment that all charges other than those of the issuing institution should be charged to the beneficiary refers to instances where two or more banks are involved. This may occur when the issuing bank has no relationship with the beneficiary, or when the owner's or operator's bank is unable to issue a letter of credit, but vouches for the owner's or operator's credit standing so another bank may issue the mechanism. This situation generally occurs with documentary letters of credit, where the account party is billed by one bank while the beneficiary may be billed by the second bank. The Agency does not expect this arrangement to occur frequently in meeting the Subpart H requirements. In any case, EPA will not assume payment for any charges associated with this instrument; therefore, such a provision is not in the standard letter of credit form.

Under the final regulations, the credit amounts will not be assignable to any other entity. Although the draft amounts will be deposited into the standby trust fund, the beneficiary of both instruments is the EPA. The letter of credit language does not provide for a negotiation of the credit, in which the issuer's obligation is extended to third parties who purchase the beneficiary's draft. The letter of credit form does not include such a provision, since EPA has the responsibility for the implementation of these regulations, and the funds, if the letter of credit is drawn on, will be deposited in the standby trust fund.

Final Regulation. With the help of commenters in the financial community, the Agency has developed a greatly simplified letter of credit which accomplishes all necessary aims. The letter of credit now requires that the facilities and amounts for closure and/or post-closure activities covered by the instrument be specified. The purpose of the letter of credit is set forth in the statement triggering payment by the issuing institution. The standard language also provides that the amount of any payment triggered by the draft will be deposited promptly and directly into the standby trust fund that was established as a condition of using the letter of credit for financial assurance. Other provisions in the form, covering length of issue and renewal, are discussed below.

4. Comments on Changing the Amount of the Letter of Credit.

Reproposed Regulation and Rationale. The reproposed regulation required that the owner or operator obtain the credit in at least the amount of the adjusted cost estimate. The amount of the credit would have to be increased whenever changes in the cost estimate required a greater amount than was currently covered by the credit. The difference had to be made up within 30 days of the change in the cost estimate. If the cost estimate decreased, the amount of the credit could be reduced, and if requested to do so, the Regional Administrator had to send written notice to the issuing bank of any reduction within 30 days after receiving the request from the owner or operator. The Agency wanted to make sure that the level of financial assurance provided by the letter of credit was an adequate amount, based on the most recent adjusted cost estimates. However, if the cost estimate decreased, the Agency believed that the owner or operator should not have to maintain a higher amount of credit than was necessary.

Comments and Responses. Commenters made the following points on changing the amount of the letter of credit:

- Some commenters said it would be a simple, automatic process to change the amount, where an additional letter of credit would be issued to cover the additional amount. In the alternative, the regulations could provide that the Regional Administrator would notify the bank of the lower limit and pledge not to draw on the existing credit above the new amount, or authorize automatic decreases.
- Others said it would involve a repeat of the original review process, including an examination of the bank's existing credit obligations under the legal lending limit, surrender of the existing letter of credit, a written application form for amendment and the written consent of all parties before the amount of the credit could be changed.

The Agency has learned from commenters that banking practices, as well as fees, vary from institution to institution. Certain restrictions on the treatment of the letter of credit are imposed by the Agency in order to ensure that the intent of the regulations will be carried out. However, EPA does not believe it is appropriate to stipulate the method by which issuing institutions must change the amounts of credit covered by the instrument.

Some banks will follow practices for increasing and decreasing the amount that may pose an additional burden on all affected parties. This could occur when the issuing institution requires the consent of all parties for modification of the credit amount, or other requirements noted by commenters. Therefore, EPA decided that coverage of closure and post-closure financial assurance for facilities in more than one Region will not be permitted. An undue administrative burden would be imposed on the Agency if the issuing institution required that the original letter of credit must be surrendered, an additional application form must be submitted by the owner or operator, and the written consent of all parties must be obtained before changes in the credit amount could take place. The Regional Administrators that were beneficiaries of that letter of credit would have to act in concert in complying with those requirements, and the possibility existed that the original instrument would expire before the new one was effective. However, coverage of several facilities within one Region under a single letter of credit is still permitted.

A letter of credit, which assures funds for closure or post-closure care must be increased within 60 days of an increase in the cost estimate during the operating life of the facility. The credit amount may be reduced if the cost estimates decrease and the Regional Administrator approves the reduction in writing. However, during the period of post-closure care, the amount of the letter of credit may be reduced only if the owner or operator is able to demonstrate to the Regional Administrator that the remaining expected cost of post-closure care is less than the amount of the credit. This is necessary since no upward adjustments in the amount of the credit are required after the operating life of the facility, yet the need for assurance or post-closure costs remains.

Final Regulation. The final regulation retains most of the language of the reproposed regulation in requiring modifications of the credit amount based on changes in the cost estimate. The period allowed for making changes is increased from 30 to 60 days. If the amount of the cost estimate decreases prior to closure, the owner or operator may request that the Regional Administrator send written notice to the issuing institution that the level of credit may be reduced. If the Regional Administrator approves such a reduction, he must notify the letter of credit issuer of the reduction within 60 days of the request. During the post-closure care period, a reduction in the amount of the letter of credit will be approved if the owner or operator can demonstrate that the cost of the remaining post-closure care will be less than the amount of the credit.

5. Comments on the Length of and Drawings on the Letter of Credit.

Reproposed Regulation and Rationale. The reproposed regulation called for the letter of credit to be issued for a period of at least one year. The letter also had to contain a clause providing for automatic extensions of the credit, subject to 60 days' notice by the issuer to both the owner or operator and the Regional Administrator of the bank's intention not to renew the credit. The Regional Administrator could draw on the credit if the owner or operator was not able to provide other evidence of financial assurance within 30 days after the notice of nonrenewal was received, or within 30 days after the beginning of closure when he used a letter of credit for a lump-sum payment at the time of closure for post-closure care. The Regional Administrator could also draw on the credit if there was a legal determination of a violation of the closure or post-closure requirements of these regulations. If the credit was drawn on, the Regional Administrator would deposit the funds in an interest-bearing escrow acccount and disbursements would be made as specified for trust funds. The owner or operator had to keep the amount of the escrow equal to any changes in the cost estimate.

Comments and Responses. The Agency received numerous comments on the term and renewal of the letter of credit:

- Some commenters said the term of the credit was far too long, the treatment of credits could change in that time, and the performance obligation of the owner or operator covered by the credit could not be completed within one year.
- Some commenters said many banks will not issue credits with automatic renewal clauses as a matter of internal policy; the bank would

have to examine the financial standing of the owner or operator each year before making the decision to renew. Other commenters said an automatic renewal was possible.

- Many commenters from the financial community said that the renewal provisions constituted an automatic lock-in to the credit, since the Regional Administrator could draw on the credit if a nonrenewal notice were sent and the owner or operator was not able to obtain other financial assurance.

EPA learned from commenters that the reproposed regulation calling for automatic renewals indefinitely was not in keeping with standard practice for letters of credit, although provisions for automatic renewals for certain specified periods of time are included in some letters of credit. However, the main criterion for financial mechanisms which the Agency will authorize is that the mechanisms provide financial assurance for the costs of closure and post-closure care in order to protect human health and the environment. If the letters of credit provided assurance for only one year at a time, excessive compliance procedures under Section 3008 of RCRA or other administrative burdens may result. The commenters from the financial community were not able to express clearly the difference between one year terms and automatic renewals of the instrument, since in both instances the letter of credit could be drawn on if a renewal notice was sent and the issuing institution may be liable for the amount of the credit. Therefore, the Agency decided to retain the provision of at least one year terms with automatic renewals. If the owner or operator secures other financial assurance in the time allotted (i.e. within 30 days of a compliance order issued pursuant to Section 3008 of RCRA) there is no problem for the issuer. However, if the owner or operator is unable to demonstrate alternate financial assurance, funds will be available to deposit into the standby trust fund so closure and post-closure activities can take place.

- o Commenters said the Regional Administrator, in the event of a notice of nonrenewal, should not be able to draw up to the full amount; that he should have to wait until 10 days before the credit terminates before drawing; and that he should be required to order closure so the money would not go to the government and the facility continue to operate.
- o EPA should hold the issuer liable until closure is completed if the credit is not renewed, so the owner or operator could not scheme with the issuer to wait until the credit is terminated to perform closure and then declare bankruptcy.
- o EPA should require the Regional Administrator to draw on the credit if there is a notice of nonrenewal.
- o Other commenters said EPA should refund any funds which are not needed if the owner or operator secures other financial assurance after the Regional Administrator draws on the credit.
- o The Agency must be certain it knows of the renewal timing, so lack of communication does not cause the credit to expire unintentionally without a necessary drawing.

As discussed earlier, the Agency must be able to draw on the credit in the event of non-renewal of the mechanism by the financial institution and a failure to provide alternate financial assurance by the owner or operator, since the intent of the regulations is to provide assurance of adequate funds for the proper closure and post-closure care of facilities. As discussed in Section C, the Agency has decided that Section 3008 procedures must be instituted when a notice of nonrenewal is received. The Regional Administrator will issue a compliance order to the owner or operator. If the owner or operator fails to obtain alternate financial assurance within 30 days, the Regional Administrator will be entitled to to draw on the letter of credit. The issuing institution may not terminate the credit while a Section 3008 compliance procedure is pending. The owner or operator is required to maintain financial assurance until he receives notice from the Regional Administrator that such assurance is no longer required. These provisions will assure that letter of credit funds will be available if there is a notice of nonrenewal of the instrument or until closure is completed. Expiration of the letter of credit cannot occur, in any case, until 90 days after the date on which the Regional Administrator received the notice of nonrenewal, as shown on the signed return receipt.

If the Regional Administrator draws on the credit, the money will be deposited by the issuing institution into the standby trust fund established when the letter of credit was issued. Once the standby trust fund is so activated, the owner or operator is responsible for maintaining the fund in the amount of the most recent adjusted cost estimate. If the owner or operator then follows the regulations governing trust funds he will be in compliance with the financial assurance requirements. Therefore, there would not be a need to order closure for a violation of the financial requirements, or to refund the money since the funded trust would demonstrate financial assurance. Reimbursement to the issuing institution by the owner or operator is not the responsibility of the Agency, but, as is the case with such instances involving surety bonds (see Section E), will be of concern to the owner or operator.

Final Regulation. The final regulation provides that the letter of credit must be irrevocable for a term of one year, and that there must be automatic renewals of the minimum one-year periods, unless the issuing institution notifies both the owner or operator and the Regional Administrator, by certified mail, of its intention not to renew the credit at least 90 days before the current expiration date. Unless the owner or operator has established other financial assurance as specified in the regulations, the Regional Administrator will, upon receipt of a notice of nonrenewal, issue a compliance order pursuant to Section 3008 of RCRA. If the owner or operator is not able to demonstrate alternate financial assurance within 30 days after the order is issued, the Regional Administrator may draw on the credit and the issuing institution will deposit the funds promptly and directly into the standby trust fund established at the time the credit was obtained. The length of notification has been increased to 90 days in order to allow adequate time to make necessary arrangements for obtaining other financial assurance and to hold compliance hearings. In most instances these compliance procecures should be completed within 90 days. In the event they are not, a provision has been added that the letter of credit may not be terminated while a compliance procedure is pending pursuant to Section 3008.

G. Revenue Test for Municipalities

In the reproposal, municipalities, as defined in RCRA, could demonstrate financial assurance by passing a revenue test. A municipality passed the test by having annual general tax revenues which were 10 times the cost estimates to be covered. The test was intended to identify those local governments which have a tax base sufficient to readily support the costs of closure and post-closure care.

The proposed revenue test was the subject of numerous comments. While some commenters thought it was a reasonable approach, others felt that municipalities should be required to provide the same forms of assurance that other entities must provide. They cited the delays in funding that could occur if cities failed to plan adequately for meeting closure costs.

Several commenters thought that a test which requires a local government to have only 10 times the cost estimates was inadequate. They contended that many cities would find it extremely difficult to reallocate in any year 10 percent of their budget to cover closure and post-closure costs. One commenter suggested that the multiple be increased to 20.

Several commenters objected to the test because it limited revenues to be counted to property, income, and sales taxes. They suggested that fees, contract payments, and any other income should be included. Other commenters suggested alternatives to the test be allowed, including municipal bond ratings, bond pledges, annual audits, and requirements for enterprise accounting.

Because of the complexity of the issues regarding the revenue test, the Agency could not analyze them adequately in time for this promulgation.

The Agency expects to announce its decision on whether it will promulgate the revenue test within the next few months. At the same time the Agency will also announce its decison regarding the financial test (see below) and self-insurance for liability coverage. The Agency decided to proceed with today's promulgation of financial responsibility standards despite the fact that these key decisions are yet to be made, in order to begin assuring financial responsibility for hazardous waste management and to meet the court-ordered schedule for issuing RCRA regulations. In planning how they will meet the financial responsibility requirements promulgated today, owners and operators should not consider the revenue test, financial test, or self-insurance as available or imminently available options at this time.

H. Financial Test and Guarantee

The financial test was one of the means that could be used to provide financial assurance under the reproposed regulations. The test included three criteria; the firm had to have at least $10 million in net worth in the U.S., a ratio of total liabilities to net worth not greater than 3 to 1, and net working capital in the U.S. at least twice the amount of the cost estimates to be covered. The firm had to demonstrate these characteristics in quarterly, unconsolidated, audited reports. A firm meeting the test could guarantee the closure and post-closure obligations of another entity. It was expected that this guarantee would be used primarily by parent firms to guarantee the obligations of their subsidiaries.

Many commenters supported inclusion of the financial test. Others criticized the test as being too weak or too stringent, difficult to administer, and costly for companies to use because of the reporting requirements. Many alternative test criteria were suggested.

As with the revenue test, the Agency could not complete its study of the issues in time for this promulgation. As noted above, the Agency's decisions regarding the financial test and the guarantee based on the financial test will be announced at the same time as the decision on the revenue test.

I. Variations in Use of Mechanisms

Reproposal Regulation and Rationale. To improve flexibility in use of the mechanisms specified in these regulations, the reproposal allowed owners and operators to:

(1) Use more than one type of instrument to meet the financial assurance requirements for a facility, selecting from the trust funds, surety bonds, and letters of credit as specified in these regulations. One of the situations in which this provision may be useful is the following: The closure cost estimate for a facility increases markedly because of changes in the closure plan. The owner or operator has been using a bond or letter of credit but finds that the issuer will not agree to expanded coverage. In that case he may be able to use one of the other instruments to make up the difference rather than establish assurance for the entire estimate using another instrument and cancelling the original one.

(2) Use the mechanisms to assure closure or post-closure funds for more than one facility. Many firms have more than one facility and may find it cheaper in terms of fees and administrative costs to cover them all with one mechanism rather than set up a separate one for each.

(3) Use a single mechanism to provide financial assurance for both closure and post-closure care of one or more facilities. Again, fees and administrative costs may be reduced if coverage can be combined under one mechanism.

Comments, Responses and Final Regulations: The following comments were received on these provisions:

- All of these provisions are appreciated because they are potentially cost-reducing and provide owners and operators with greater flexibility. They should not add significantly to EPA's administrative burden.

- Allowing coverage of multiple facilities is a good idea and will probably reduce the paperwork required.
- Sureties said if the owner or operator has coverage through several instruments, the trust fund should be used first, before the bond, since trust monies are directly from the owner or operator. The order in which instruments will be invoked should be clear.
- If the trust fund is providing only part of the coverage, does the 20-year buildup period still apply?

Since many owners and operators believe that these provisions are useful, the EPA has retained them in the final regulations with some qualifications. In the provision allowing use of more than one instrument, a phrase was added to make it clear that the specifications for the individual instrument are to be followed except that the single instrument need not cover the whole amount of the cost estimate. If more than one instrument is used, it is the coverage provided by all of the instruments that must at least equal the amount of the estimate; if one of the instruments is a trust, however, the 20-year buildup provisions for existing facilities would apply to the portion of the cost estimate covered by the trust.

An owner or operator using multiple instruments may include a surety bond guaranteeing payment but not a surety bond guaranteeing performance of closure or post-closure care. The latter type of bond is excluded because of the potential complexity of combining the performance option in the bond with funds from other instruments in case of default.

The final regulation states that if an owner or operator uses a trust fund and a letter of credit or surety bond, he may use the trust fund in place of the standby trusts required for letters of credit and surety bonds.

If an owner or operator uses only letters of credit or surety bonds, only one standby trust fund is required for all instruments. Requiring a separate standby trust for each instrument means added costs for the owner or operator and added administrative burden for the Agency.

Despite the sureties' point that trust funds should be used first, and that an order in which the instruments will be invoked should be established, the final regulation says that the Regional Administrator may invoke use of any or all of the instruments to provide for closure and post-closure care. This was necessary to give flexibility to the Agency in obtaining needed funds as quickly as necessary. If a set order in which the instruments would be invoked were established, EPA could conceivably be delayed by legal actions required to release funds from one instrument before proceeding to the next instrument. This could result in the inadequate closure of a facility, or none at all.

In the provision allowing coverage of multiple facilities, letters of credit are not allowed to cover facilities in more than one Region. Without this restriction, increases and decreases in the amount of the letter of credit, even if they resulted from changes in a closure plan at one facility, would have to be agreed to by all the Regional Administrators who are addressees of the letter. This could mean possible delays in effecting changes needed in the amount of the letter of credit and add to the administrative burden of the Regional staff. The restriction to one Region does not apply to the other instruments, since only the approval by the Regional Administrator for the Region in which the affected facility is located need be obtained in order to decrease the coverage, and increases may be made without prior approval or return of existing instruments.

Combining financial assurance for closure and post-closure care in one instrument is allowed for the letter of credit and the trust fund but not for surety bonds. Unlike the other instruments, the surety bonds must, in order to specify the conditions of the guarantees, differentiate between what is to be done to assure closure and post-closure care. The Agency believes that combining the closure and post-closure language in one bond form would add to its complexity and risk confusion.

J. Incapacity of Issuing Institutions

A section was added to the final regulations (§§264.148 and 265.148) to clarify what must be done by the owner or operator when the institution issuing a bond, letter of credit, or insurance policy goes bankrupt, becomes insolvent, or loses its license or charter. The owner or operator must obtain other financial assurance or liability coverage within 60 days.

The basic qualifications for issuing institutions for the purposes of the financial assurance requirements are stated in the regulations for each instrument. The Agency believes these qualifications generally offer adequate assurance that the issuers' instruments are sound. Should the issuer no longer meet the qualifications, the instrument would no longer be acceptable evidence of financial responsibility under these regulations and the owner or operator would no longer be in compliance. There may be instances, however, when the institution suffers insolvency or is otherwise incapacitated for some time before they lose the qualifications stated in the regulations. The owner or operator is required to act under such circumstances to obtain other evidence of financial responsibility.

K. Applicability of State Financial Requirements

Reproposed Regulation and Rationale. A number of States have adopted hazardous waste regulations which require owners or operators to demonstrate financial assurance for closure and post-closure care. (See Chapter II for examples.) Several States also require liability coverage. Like the Federal regulation, many of these State regulations require owners or operators to use specific financial mechanisms for these purposes.

The Agency recognizes that differences between State and Federal financial responsibility requirements might result in duplication and unnecessary costs to owners and operators. In those States that receive authorization to operate a hazardous waste regulatory program in lieu of the Federal program, there will be no duplication since only the State's requirements would apply. However, in those States which have not obtained Federal authorization, the owners or operators would be subject to Federal hazardous waste regulations and also to any State hazardous waste regulations that are in effect. To avoid unnecessary duplication and costs, the Agency included a section in the reproposed regulations (§265.149) that allowed owners or operators to use State mechanisms to meet the Federal financial requirements if such mechanisms provide assurances that are substantially equivalent to those of mechanisms specified in the Federal requirements.

If the amount of assurance or coverage from the State mechanism is less than that required by EPA, the owner or operator had to establish additional financial assurance or liability coverage for the remaining amount using any of the means allowed in the Federal regulation.

No comments were received specifically on this section.

Final Regulation. This provision has been retained in the final regulation (§§264.149 and 265.149) with several changes. Where the owner or operator was allowed to use "State-authorized" mechanisms, the term has been changed to "State-required." This means that the owner or operator may use a State mechanism if that is required by the State; if he has the option to meet the State requirements by using the mechanisms specified in these regulations, he must comply with the Federal requirements. This change will reduce the burden upon EPA of having to evaluate various mechanisms allowed by States to determine equivalence to Federal mechanisms. Another change was the addition of a requirement that evidence of the establishment of a State-required mechanism be sent to the Regional Administrator so that the Agency could review the adequacy of these mechanisms. Inclusion of a reporting requirement was overlooked in the reproposal. A third change was the substitution of "equivalent to or greater than" for "substantially equivalent" in referring to the financial assurance that the State mechanisms must provide. The Agency intends that they should not be less effective than the EPA-specified mechanisms and has decided that the revised wording better conveys this intent.

L. State Assumption of Financial Responsibilities

Reproposed Regulation and Rationale. In the same section as the provision allowing use of State mechanisms (§265.149), the reproposal had a provision stating that if a State assumed the legal responsibility for a facility's closure, post-closure, or liability coverage requirements or assured that State funds would be available to cover the requirements, the owner or operator was in compliance with EPA financial requirements to the extent that such State assurances were substantially equivalent to those required by EPA. The Agency considered this to be a logical extension of the exemption of State facilities.

The owner or operator with such guarantees was required to send a letter to the Regional Administrator describing the nature of the guarantees and citing the State regulation providing for them. The letter had to be sent to both EPA and the responsible State agency. The letter to the State agency would help inform the State that the guarantee was being employed in this manner. No comments were received on this provision.

Final Regulation. Since the State guarantee is a potentially important mechanism, and does not belong under the heading for State financial requirements, the State guarantee provisions have been put into a separate section (§264.150 and 265.150). The letter describing the guarantee must now be signed by the State agency rather than the owner or operator, to save the need for verification by EPA. "Substantially equivalent" has been changed to "equivalent to or exceed" to make it clear that the degree of assurance should be no less than that provided by the other mechanisms allowed by these regulations.

M. Other Mechanisms Reviewed

EPA believed that escrow agreements might be a useful financial mechanism and therefore actively solicited information about them. Most of the commenters said there is little difference between trust funds and escrows and therefore there is little point in offering both. Trust funds appear to be preferable because the law of trusts places obligations upon trustees to protect the interests of the beneficiary (i.e., EPA in this case). An escrow agent is responsible only for what is specified in the escrow agreement. The Agency believes it would be extremely difficult to draft an escrow agreeement that would adequately specify all the actions that the Agency would want the escrow agent to take in all situations to assure that the instrument served its intended purpose. Some commenters said that if the escrow agreement was carefully worded, escrowed funds could be safer from creditors' claims than trust funds, but other commenters and the Agency's analysis indicated that trust assets are better protected. Under trust law, legal title to property in a trust is transferred from the grantor to the trustee. With an escrow agreement legal title is not transferred to the escrow agent; since the grantor retains legal title while property is in escrow, such property is more likely to be subject to creditor's claims than property in a trust. Some commenters said fees for escrow accounts tend to be lower than for trusts, but other commenters said that, if an escrow agreement were written to be comparable to the trust agreement, the fees would also be comparable. Based on the information obtained, EPA believes trust funds are preferable to escrows and has decided not to add the escrow agreement as an option.

Commenters suggested that EPA reconsider allowing owners and operators to pledge collateral, deposit funds, certificates of deposit, or other property with EPA. EPA has several problems with this approach. As described in Section C, General Issues, EPA at present lacks authority to directly receive and spend funds for closure or post-closure care. This may be resolved through legislation, however, another problem exists in the large amount of administrative work that would be involved in maintaining long-term accounts for owners and operators, evaluating property, and assuring that the required amount of value is continously available.

EPA examined the prospects for using a security interest as a financial assurance mechanism. Since the early 1960's it has been a uniform method by which a debtor can use personal property (but not realty) to guarantee payment to a creditor. The security interest is created when a debtor signs a written security agreement describing the collateral and when the creditor gives value to the debtor. To be of use, the security agreement must also describe the agreement between the two parties and define what shall constitute a default. A financing statement describing the agreement must be filed with the State. The Office of Surface Mining, in regulations to go into effect in 1981, includes the security interest among their financial assurance mechanisms.

While there are advantages to the security interest, largely because of its simplicity and availability as a mechanism, it appears to be unsuited to the purposes of these regulations. The obligations to be covered will often be for very long terms, and the policing of the collateral to assure that value is maintained may be a major problem. Furthermore, over a 30-year post-closure period EPA would have to refile the financing statement a number of times with the State. During interim status, when a closure or post-closure plan may not be closely reviewed by the Agency until shortly before closure, the definition of default would not be sufficiently precise for the purposes of the security agreement. For these various reasons the Agency has decided not to include the security agreement in the present regulations.

Use of insurance to guarantee payment into a trust fund may be a possible option, according to one commenter. Payments by the owner or operator would be considered premiums and therefore tax deductible. This would be an annuity-type arrangement and possibly attractive to large life insurance firms, the commenter said. The Agency will continue to look into the possibilities for such a mechanism and invites comments on its feasibility and the features that should be considered.

Two commenters said they thought the States should guarantee closure and post-closure care of facilities owned or operated by municipalities. One of the commenters advocated legislation requiring that States assume this responsibility. EPA does not have authority to direct the States to provide such guarantees. The regulations allow such guarantees (§§264.150 and 265.150) among the options owners and operators may use to meet the financial assurance and liability requirements. Although the Agency sees the State guarantee as a highly acceptable option, especially for long-term post-closure care, other means of financial assurance are also effective and may be viewed as being more economically efficient. Also, the wide variety and number of entities covered by the term "municipality" should be kept in mind -- guaranteeing the closure and post-closure obligations of municipalities may amount to a large fiscal burden in some States. For these reasons EPA does not plan to initiate legislation requiring State assumptions of such responsibility at this time.

N. Other Issues

1. Unavailability of instruments during interim status

One commenter implied that the financial assurance instruments would not be available during interim status:

- The regulation requires the permit applicant to submit information (trust instrument, performance bonds) as part of his application which he will not obtain until the permit is actually issued.

The permit regulations do not require that financial instruments be submitted with the permit application. The instruments for existing facilities are to be submitted by the effective date of the Part 265 financial assurance regulations; for new facilities they are to be submitted 60 days before hazardous waste is first received, as explained above (see Section C).

The Agency received no information that owners and operators would be precluded from obtaining financial instruments because they lacked permits. Some representatives of financial institutions did express concern, however, about potential liability associated with hazardous waste facilities. Supposedly, such concern would be lessened if the facilities were awarded permits. Financial representatives also placed emphasis on the financial standing of the owner or operator as a basis for issuing the instrument.

2. Release Statements from EPA

Two comments were received concerning the statement releasing the owner or operator from financial assurance for closure (§265.143(h)):

- As in the closure section, the post-closure section should contain a paragraph requiring the Regional Administrator to send a letter releasing the owner or operator from financial assurance.

The Agency recognizes that a release may be needed or desirable and has provided for it in §264.145(h) and §264.145(i).

- In the reproposal, a release is to be provided unless EPA has reason to believe the closure was not in accordance with the closure plan. EPA should be specifically required to notify the owner or operator if he is not condsidered to be in compliance and state why.

Since the owner or operator should be notified of violations under Section 3008 of RCRA, special provision for such notification in these regulations seems unnecessary. In the final regulations, no requirement is made for such notification.

3. Effective dates

Comments were received concerning effective dates:

- We recommend that EPA not require preparation of closure and post-closure plans and cost estimates until November 19, 1981, or 180 days prior to closure, whichever occurs first, because of the amount of work that must be done to comply with all the regulations.
- Requirements for closure and post-closure plans and estimates should be deferred until the effective date of permanent standards since they must be based on final closure and post-closure regulations, not interim status regulations.

The effective dates for closure and post-closure plans and cost estimates have been delayed 6 months, to May 19, 1981. This will be comparable to the effective date of the general standards. Further delay seems unjustified, in view of the need, emphasized by the Congress and numerous others, to implement a complete regulatory system as soon as possible.

References for Chapter IV

1. Damage and Threats Caused by Hazardous Material Sites. EPA Report No. EPA/430/9-80/004, January 1980.

2. Several public utility bond defaults are indicated on p. 432 of Harold G. Fraine and Robert H. Mills, "Effects of Defaults and Credit Deterioration on Yields of Corporate Bonds", The Journal of Finance, 1961.

3. An electric utility which experienced liquidation is cited on p. 466 of Richard C. Edwards, "Stages in Corporate Stability and the Risks of Corporate Failure", The Journal of Economic History, June 1975.

4. See e.g. Sioux Valley Electric Assn. v. Butz, 367 F. Supp 686, (DCSD, 1973), affd, 504 F.2d 168 (8th Circ., 1974).

5. 7 CRF 1700.1

6. DOT staff information on financial responsibility of transporters, telephone conversations, August 25, 1980.

7. Hempel, George H. The Postwar Quality of State and Local Debt. Columbia University Press, New York, 1971.

8. Bogan, J.E., editor, Financial Handbook, Ronald Press, New York, 1968, p. 6.8.

9. Memorandum dated June 25, 1980 from Carole J. Ansheles of EPA to the public docket for the financial requirements regulations, reporting telephone conversations with (1) Jim Ashburn of First National Bank and Trust Co., Hamilton, Ohio on June 24, 1980, (2) Walter T. Bagnell of Peoples National Bank of Washington, Seattle, Washington on June 24, 1980, (3) Joseph Baker of First National Bank, Mobile, Alabama on June 24, 1980, (4) Charlie Gibbons of First National Bank and Trust Co., Hamilton, Ohio on June 25, 1980 and (5) Charles J. Connor, Jr., of First Virginia Bank, Falls Church, Virginia on June 25, 1980, regarding availability of trustees for small trust funds.

10. Memorandum dated June 22, 1980 from Carole J. Ansheles of EPA to the public docket for the financial requirements regulations, reporting a telephone conversation with Kit Harahan of the U.S. League of Savings Associations, Washington, DC office on July 16, 1980, regarding savings and loans acting as trustees.

11. Memorandum dated August 20, 1980 from Carole J. Ansheles of EPA to the pubic docket for the financial requirements regulations, reporting a telephone conversation with James D. McLaughlin of the American Banking Association, Washington, DC on August 15, 1980.

12. Trust Fact Book, American Banking Association, second edition, 1980, p. 16.

13. Letter to James A. Rogers, Office of General Counsel, EPA, from Stanley B. Judd, Deputy General Counsel, Division of Investment Management, Securities and Exchange Commission, dated October 20, 1980.

14. Memorandum dated August 20, 1980 from Carole J. Ansheles of EPA to the public docket for the financial requirements regulations, reporting telephone conversations with (1) Susan Sottile, (2) Ed Cohen, (3) Tom Hines, (4) Al Craft, (5) Barry Roy, (6) Bill Coppersmith and (7) Dave Crawford, all of the Internal Revenue Service, on August 13, 14 and 15, 1980.

15. Glossary of Fiduciary Terms, American Bankers Association, Trust Division, 1968, 1980 reprint, p. 26.

16. Booz, Allen, and Hamilton, Inc. and Putnam, Hayes, and Bartlett, Inc., Hazardous Waste Generation and Commercial Hazardous Waste Management Capacity--An Assessment, November 1980.

17. Memorandum dated July 23, 1980 from Thomas Tebo of EPA to the public docket for the financial requirements regulations, reporting on a meeting between U.S. Department of the Treasury Audit Staff and EPA contractor's staff on July 10, 1980.

18. Memorandum dated August 18, 1980 from Thomas Tebo of EPA to public docket for the financial requirements regulations, reporting on telephone conversation with Lloyd Provost, Secretary for Surety Rating of the Surety Association of America on August 18, 1980.

19. Contact report dated July 14 from Judith Weintraub of International Research & Technology (IR&T) on telephone conversation with Joe McHugh, Fidelity Deposit Compnay on July 14, 1980.

20. Comments by Ben Bialek, Assistant Attorney General for the State of Maryland, on the Maryland Environmental Service's hazardous waste management regulatory program, with regulations attached, August 25, 1980; Telephone conversation between Mr. Bialek and EPA staff, memorandum from Thomas Tebo of EPA to public docket dated August 25, 1980.

21. Telephone conversation between Vera Starch, Wisconsin Department of Natural Resources, and EPA staff on the bonding of a solid waste disposal landfill, July 22, 1980; memorandum from Thomas Tebo of EPA to public docket dated July 22, 1980.

22. Meeting between Robert Skall of the Federal Maritime Commission and EPA staff on FMC and EPA financial responsibility regulations, March 7, 1980. Memorandum from Emily Sano of EPA to the public docket, same date; Telephone conversation between Robert Drew of the FMC and IR&T staff, July 2, 1980, contract report by Judith Weintraub of IR&T, same date.

23. Harfield, Henry. Letters of Credit, American Law Institute-American Bar Association, Philadelphia, 1979, p. 7.

24. Ibid., p. 27.

25. Letter to George Garland, Chief, Economic & Policy Analysis Branch, EPA, from Henry Harfield, Shearman and Sterling, dated June 10, 1980.

26. Transcript of meeting at American Bankers Association (ABA) with Martin Shea, Morgan Guaranty of New York, Robert Bevan of ABA, Pedro Areau, Vice President, Riggs National Bank, Richard Peterson, CHief Counsel, Independent Bankers Association, William C. Pribble, Jr., of Northwestern National Bank, Minneapolis, Charles W. BIsset, Vice President, Citibank, N.A., New York, James D. McLaughlin of ABA, Jo Sabol, of ABA, William Smith of ABA and others, on June 11, 1980, p. 93.

27. Memorandum dated September 4, 1980 from Carole J. Ansheles of EPA to the public docket for the financial requirements regulations, reporting telephone conversation on September 3, 1980 with Henry Harfield, Shearman and Sterling, regarding clarification of comments made earlier by Mr. Harfield on letters of credit.

28. Ibid.

29. Memorandum dated August 5, 1980 from Carole J. Ansheles of EPA to the public docket for the financial requirements regulations, reporting on June 17, 1980 meeting in New York with (1) S. J. DiaSparra of Irving Trust Co., New York (2) J. F. Savoia of Irving Trust Co., New York (3) Ray P. Agostino of Citibank NA, New York and (4) Kathleen Tripp of Morgan Guaranty & Trust Co., New York.

APPENDICES TO PART ONE

Analyses Related to Pay-In Period For Trust Funds

Appendix A

BANKRUPTCY RATE BASED ON INTERMEDIATE SIZE MANUFACTURING FIRMS

The bankruptcy rate used in the model should reflect the bankruptcy rate of the manufacturing firms which will be required to set up trust funds. To derive an estimate of this rate, EPA staff began with the bankruptcy rate for all businesses. The mean and standard deviation of the bankruptcy rates for historical time periods are:

	Bankruptcy Rate[1]	
	Mean	Standard Deviation
1950 - 1978	0.44%	0.107%
1960 - 1978	0.45%	0.114%
1969 - 1978	0.37%	0.067%
1973 - 1978	0.34%	0.077%

The 1960-1978 bankruptcy rate was selected as a reasonable estimate of the future rate of bankruptcy.

However, this estimate is for all businesses including retail stores, mining, construction and service companies. Data over the 1973-1978 period revealed that the bankruptcy rate for manufacturing firms is higher on average than non-manufacturing firms. Over the 1973-1978 period, manufacturing firms had an average bankruptcy rate of 0.48 percent with a standard deviation of 0.089 percent.[2] Over a comparable time period, the bankruptcy rate for all firms averaged 0.34 percent with a standard deviation of 0.077 percent, as shown above. Thus, the mean bankruptcy rate is approximately 41 percent higher than average for manufacturing firms and the standard deviation is approximately 16 percent higher. Applying these factors to the data for the 1960-1978 period gives a mean bankruptcy rate of 0.64 percent and a standard deviation of 0.132 percent.

Dun and Bradstreet also provides data on the size of the businesses which go bankrupt. Eighty (80) percent of the businesses which went bankrupt

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1/ All data on bankruptcy rates are from The Failure Record, Dun & Bradstreet, Inc., 1979.

2/ Dun & Bradstreet (D&B) gave total number of manufacturing failures rather than the rate. To derive the rate the total number of failures was divided by an estimate of the total number of manufacturing companies. The Census of Manufacturers shows that there were 267,422 manufacturing companies in 1972. D&B indicate that the number of businesses started each year is almost equal to the number of businesses discontinued each year. Hence, the 1972 figure has been used for each year of the 1973-1978 period.

in 1978 had between $25,000 to $1 million in current liabilities. Firms of this size are also the most likely to require trust funds. Firms with less than $25,000 in current liabilities are more likely to use off-site disposal facilities; firms with greater than $1 million in current liabilities are apt to be able to provide another financial instrument rather than a trust fund or pass the financial test. According to Internal Revenue Service statistics, approximately 52 percent of the corporations fall into the middle category. Therefore, 80 percent of the bankruptcies occur in this group which contains only 52 percent of the firms. Their bankruptcy rate is, therefore, higher than average.

To adjust the mean bankruptcy rate to account for this, the manufacturing bankruptcy rate computed above is multiplied by the factor 0.80/0.52. This yields a bankruptcy rate of 0.98 percent for manufacturing firms of this size category. This rate was rounded to 1.0 percent for this analysis. The standard deviation was adjusted slightly upward from 0.132 percent to 0.15 percent.

It should be noted that these bankruptcy rates do not represent business discontinuances. As defined by Dun & Bradstreet, failures include only those firms involved in court proceedings or voluntary actions which resulted in a loss to creditors. If operations were discontinued but all creditors were paid in full, the firm is not considered a failure.

APPENDIX B

FAILURE RATES FOR FIRMS WITH TRUST FUNDS

In addition to analyzing bankruptcy rates on the basis of size and industry type, an analysis could also focus on several other factors. These factors are of two general kinds: those related to the phenomenon that those using the trust fund will have been rejected by banks and sureties for letters of credit and surety bonds, and those relating to the special problems associated with hazardous waste disposal sites.

Firms using trust funds will not be the more viable firms in any industry. The more viable and financially sound firms in general will be able to use letters of credit or surety bonds. In general the firms using a trust fund will come from one of four classes:

(1) Smaller firms with poor credit ratings: A small firm that also has small closure/post-closure costs will still probably be able to obtain a letter of credit of surety bond it if has a generally good credit rating, or adequate collateral.

(2) Smaller firms with good credit rating but very large closure and post-closure costs: There may exist firms with basically sound financial ratios and a favorable credit rating for most purposes that may be unable to get a letter of credit or surety bond for closure/post-closure due to the fact that the associated costs are extremely large compared to the size of the firm, and the firm lacks adequate collateral. This may not be an uncommon situation. For example, one can set up a competitive landfill for an investment of from one to three million dollars, but the associated closure and post-closure costs will not normally appear in the financial records of the firm and could account for up to $800,000. Such a firm might well have a good credit rating for most purposes, but still be unable to obtain credit for this specific purpose.

(3) Larger firms with poor credit ratings: At least some large firms will lack adequate collateral and have such poor financial ratios and credit ratings that they will be unable to retain a letter of credit or surety bond, no matter what their size.

Given these considerations, it appears that firms that use trust funds will not be the average firm, but a firm with somewhat greater prospects of failure than the average firm. The first question to be examined is the effect of increased failures of simply having a poor credit rating (as is the case with classes 1 and 3 cited above). A study for the National Bureau of Economic Research by Edgar P. Fiedler, entitled Measures of Credit Risk and Experience, provides a useful review of the literature on the significance of various kinds of credit ratings.

In general, this study concludes that for business firms, credit ratings are in fact a meaningful measure of the viability of firms. Two kinds of specific quantitative data are established in this report. For Dun and Bradstreet credit ratings from the period 1952 to 1957, it was found that firms with a "high" credit rating from Dun and Bradstreet had a loss rate of .09 percent, those with a "good" credit rating had a loss rate of .5 percent, and those with credit ratings that were "fair" or "limited" had loss rates of 1.84 percent. If firms with good credit ratings are compared to those with fair or limited credit ratings, the loss rate is approximately 3.7 times greater. From 15 to 24 percent of all firms rated by Dun and Bradstreet during this period had a rating of "fair" or "limited".

This same study also notes that Moody's bond rating have a similar effect. For the period 1900-1943 there were defaults on 11 percent of all bonds rated of investment quality. For the same period, the default rate for bonds rated of less than investment quality was 42 percent. In this case, firms of poor credit ratings (ranging for most years from between 12 and 25 percent of all firms rated) failed at 3.8 times the rate of firms with investment quality ratings.

A review by IR&T of various accounting studies which attempt to use statistical methods to predict failure rates show that in general such tests succeed in dividing firms into two groups, with the lower rated group having from 3 to 5 times the failure rate of the higher rated group. The ratio of failure rate for poor credit rated firms to the average failure rate for all firms (as against high rated firms only) is approximately 2.5 for Dun and Bradstreet and Moody's ratings data given above. This adjustment assumes the low rating categories contain from 15 to 25 percent of all firms for both Dun and Bradstreet and Moody's.

Finally, there is the category of firms which have sound financial ratios and might be considered good credit risks under most circumstances, but which have such high closure and post-closure costs that they will be forced to use a trust fund and be unable to get credit for this purpose. Such firms will again be a high risk category. This is most clearly seen for one special class of such firms--off-site hazardous waste management firms. Such firms will be exposed first of all to a variety of technical risks. As noted in the IR&T draft final report, a variety of contingencies can occur at such a site which would easily cost from $250,000 to a million dollars to repair. While the probability of such events is difficulty to ascertain, it is high enough to represent a significant source of risk in itself. Added to this are the set of risks imposed by RCRA regulations. It is inherent in the enfocement system for RCRA that inadequate technical performance by such a firm could lead to immediate cessation of their ability to do business at all. In many cases, it could lead to temporary suspension of business. In the roughly comparable case of low level nuclear waste disposal sites, three of the six existing have been forced to completely suspend operations for significant periods of time. Were this to occur at a relatively small firm for which the hazardous waste disposal site is the only source of revenues, it would virtually ensure failure. It would thus not be unreasonable to assume that firms of this kind would be exposed to significantly higher failure risks than the baseline firm.

Taking all of these diverse factors into account, one could assume that a failure rate of 1.5% might be appropriate for hazardous waste firms which must use trust funds.

Appendix C

COMPUTERIZED FINANCIAL MODEL FOR TRUST FUND PAY-IN PERIOD

As discussed above, in order to maximize the amount of RCRA site closure and post-closure care costs paid by firms that would require trust funds, it is necessary to trade-off the following two factors:

1) The amount of the trust payments left unfunded due to firms going bankrupt during the trust fund pay-in period, and

2) The unfunded closure and post-closure costs resulting from plants which close rather than establish a trust fund.

The amount of the unfunded trust payments because of bankruptcy rises as the pay-in period is extended since more firms go bankrupt prior to completion of their trust fund payments. Analysis of this factor alone would therefore lead to a short pay-in period. The induced plant closures, however, rise as the trust fund pay-in period is shortened. The shortening of the pay-in period causes the cost of the trust fund to be prohibitively high for some firms. They would shut down and would be unable, or unwilling to pay for proper RCRA site closure and post-closure care. Analysis of only this factor would argue for a long pay-in period. Therefore, a tradeoff must be made between the two factors such that the total closure and post-closure costs covered by firms needing trust funds is maximized (the minimization of unfunded closure/ post-closure costs). In order to make this trade-off, EPA conducted a computerized financial analysis. The model used for this purpose is described below. The inputs and assumptions to the model are then described. Finally, the results of the analysis are presented.

Description of the Model

The model computes the present value of the unfunded closure and post-closure costs as a percent of the present value of the total trust funds needed to ensure proper closure and post-closure care of all waste management facilities.[1]

The present value of the unfunded site closure and post-closure costs due to induced plant closures is simply the number of induced closures multiplied by the cost of closure and post-closure care. All induced closures are assumed to occur immediately.

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[1] The present value equivalent of all amounts is used in order to be able to directly compare the cost of immediate closures with the cost of partially unfunded trusts in later years due to firms going bankrupt during the trust fund pay-in period.

These costs are then added to the present value of the unfunded trust payments due to bankruptcy. The present value of the unfunded trust payments due to bankruptcy is derived from the number of firms which go bankrupt each year multiplied by the amount of the unfunded trust payments in that year and the application of a discount factor. The number of firms which go bankrupt in any given year is calculated by multiplying the bankruptcy rate by the number of remaining firms. The unfunded amount of the trust fund is a function of the pay-in period and the year in which the firm goes bankrupt. The trust fund payments are constant in real terms (that is, the payments rise at the rate of inflation). Thus, if the firm goes bankrupt in year 3 of a 5 year pay-in period, three-fifths of the closure funds are available in the trust fund.[2] The remaining two-fifths is the unfunded amount. This amount is discounted to its present value by the real (net of inflation) discount rate.

Inputs to the Model

The model begins with the following inputs:

1) The bankruptcy rate,
2) Trust fund pay-in period,
3) Induced closures given the pay-in period,
4) The real (net of inflation) discount rate before taxes, and
5) Recovery rate.

Each of these is discussed briefly below.

1) Bankruptcy Rate

As explained previously, EPA believes that the trust fund users annual bankruptcy rate could be between 1.0 and 1.5 percent. The derivation of these rates is explained in Appendices A and B. The sensitivity of the results to different bankruptcy rates was analyzed by varying the annual bankruptcy rate between 0.5 to 3.0 percent. Unless "half" the predicted induced plant closures and a greater than 2 percent bankruptcy rate occur, the pay-in period should be set between 5 and 20 years, regardless of the bankruptcy rate that exists.

2) Trust Fund Pay-In Period

EPA focused attention primarily on trust fund pay-in periods of 1, 5, 10, and 20 years. Fifteen years was also briefly examined.

3) Induced Closure Rate

A schedule of induced plant closures is provided in Appendix D for the pay-in periods EPA primarily examined. Those percentages and half of those amounts were used in this analysis and are referred to in the tables that follow as "full" closures and "half" closures. The closures for a 15 year pay-in period presented in the tables that follow were extropolated from Appendix D data. This option is not present in the preceding text, because it was not given the same level of consideration as the other pay-in period options.

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[2] Trust fund payments are assumed to be made at the beginning of each year while bankruptcies were assumed to occur at the end of each year.

4) Real Discount Rate

This represents the real (net of inflation) discount rate before taxes. Since the cost to the government is being measured (i.e., the costs which the government must pay to cover the closure/post-closure costs defaulted by private industry), the discount rate should reflect the cost of government funds. A two percent real rate of return has been used in this analysis. The analysis was done varying the discount rate from 0 to 6 percent. The staff found that varying the discount led to very similar results in the trade-off analysis. The staff's pay-in period decision, if solely based on the trade-off analysis, would remain the same under the various discount rates.

5) Recovery Rate

In bankruptcy, creditors could receive some portion of the funds owed them. In the trade-off analysis presented in the text a 25 percent recovery rate was used for both induced plant closures and bankruptcies, because the staff believes it would be unable to recover most of the money. However, the staff also examined a zero and 50 percent recovery rate and found that they did not make a difference in pay-in period choice in the trade-off analysis.

Model Assumptions

In addition to the above inputs, the following assumptions were made:

- Induced closures occur immediately.
- All post-closure and closure costs are discounted to their present value equivalents assuming these costs are incurred during the year closure occurs.
- In the absence of bankruptcy, sites would be retired in a straight-line fashion over the twenty year period between year 6 and year 25. (That is, it was assumed that 5 percent of the hazardous waste management facilities had a remaining life of 6 years, 5 percent had a remaining life of 7 years and so forth.)
- Firms must build their trust fund over the life of their site or the trust fund pay-in period, whichever is shorter.

Model Results

The model makes a trade-off between the impact of bankruptcies and the effect of induced closures on unfunded payments. Each of these effects is discussed separately and then the combined effect is discussed.

Bankruptcies

Exhibit C-1 through C-3 give the percentage of trust funds not collected due to bankruptcy assuming zero, 25, and 50 percent recovery, respectively.

Induced Closure

Exhibit C-4 presents the percentage of trust funds not collected due to induced closures.

Combined Effect

The combined effect of "full" or "half" closures and bankruptcies is shown in Exhibits C-5 through C-10.

Model developed under the direction of EPA by Putnam, Hayes and Bartlett, Inc. (September 1980).

EXHIBIT C-1
PERCENTAGE OF TOTAL TRUST FUNDS NOT COLLECTED

Real Discount Rate = 0%

No Closures
0% Recovery

Bankruptcy Rate	Length of Trust (Years) 1	5	10	15	20
0.5%	0.0%	1.0%	2.1%	2.9%	3.4%
1.0	0.0	2.0	4.1	5.7	6.6
1.5	0.0	3.0	6.1	8.3	9.6
2.0	0.0	3.9	8.1	10.9	12.5
2.5	0.0	4.9	10.0	13.4	15.3
3.0	0.0	5.8	11.8	15.8	18.0

Real Discount Rate = 2%

Bankruptcy Rate	1	5	10	15	20
0.5%	0.0%	1.3%	2.6%	3.5%	4.0%
1.0	0.0	2.5	5.1	6.8	7.8
1.5	0.0	3.7	7.5	9.9	11.2
2.0	0.0	4.9	9.7	12.8	14.5
2.5	0.0	6.0	11.9	15.6	17.6
3.0	0.0	7.1	14.0	18.2	20.5

Real Discount Rate = 4%

Bankruptcy Rate	1	5	10	15	20
0.5%	0.0%	1.6%	3.2%	4.2%	4.7%
1.0	0.0	3.1	6.2	8.1	9.0
1.5	0.0	4.6	8.9	11.6	13.0
2.0	0.0	5.9	11.5	14.9	16.6
2.5	0.0	7.2	14.0	17.9	20.0
3.0	0.0	8.5	16.3	20.8	23.1

Real Discount Rate = 6%

Bankruptcy Rate	1	5	10	15	20
0.5%	0.0%	2.0%	3.9%	5.0%	5.5%
1.0	0.0	3.8	7.3	9.4	10.4
1.5	0.0	5.3	10.5	13.4	14.8
2.0	0.0	7.1	13.4	17.0	18.8
2.5	0.0	8.5	16.1	20.4	22.4
3.0	0.0	9.9	18.6	23.4	25.7

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EXHIBIT C-2

PERCENTAGE OF TOTAL TRUST FUNDS NOT COLLECTED

No Closures
25% Recovery

Real Discount Rate = 0%

	Length of Trust (Years)				
Bankruptcy Rate	1	5	10	15	20
0.5%	0.0%	0.8%	1.6%	2.2%	2.5%
1.0	0.0	1.5	3.1	4.2	4.9
1.5	0.0	2.2	4.6	6.2	7.2
2.0	0.0	2.9	6.1	8.2	9.4
2.5	0.0	3.7	7.5	10.0	11.5
3.0	0.0	4.4	8.9	11.8	13.5

Real Discount Rate = 2%

Bankruptcy Rate					
0.5%	0.0%	1.0%	2.0%	2.6%	3.0%
1.0	0.0	1.0	3.8	5.1	5.8
1.5	0.0	2.8	5.6	7.4	8.4
2.0	0.0	3.6	7.3	9.6	10.9
2.5	0.0	4.5	8.9	11.7	13.2
3.0	0.0	5.3	10.5	13.7	15.4

Real Discount Rate = 4%

Bankruptcy Rate					
0.5%	0.0%	1.2%	2.4%	3.2%	3.6%
1.0	0.0	2.3	4.6	6.0	6.8
1.5	0.0	3.4	6.7	8.7	9.7
2.0	0.0	4.4	8.6	11.2	12.5
2.5	0.0	5.4	10.5	13.5	15.0
3.0	0.0	6.3	12.2	15.6	17.3

Real Discount Rate = 6%

Bankruptcy Rate					
0.5%	0.0%	1.5%	2.9%	3.7%	4.1%
1.0	0.0	2.9	5.5	7.1	7.8
1.5	0.0	4.1	7.9	10.1	11.1
2.0	0.0	5.3	10.1	12.8	14.1
2.5	0.0	6.4	12.1	15.3	16.8
3.0	0.0	7.4	14.0	17.6	19.3

EXHIBIT C-3
PERCENTAGE OF TOTAL TRUST FUNDS NOT COLLECTED

No Closures
50% Recovery

Real Discount Rate = 0%

Bankruptcy Rate	Length of Trust (Years) 1	5	10	15	20
0.5%	0.0%	0.5%	1.1%	1.4%	1.7%
1.0	0.0	1.0	2.1	2.8	3.3
1.5	0.0	1.5	3.1	4.2	4.8
2.0	0.0	2.0	4.0	5.5	6.3
2.5	0.0	2.4	5.0	6.7	7.7
3.0	0.0	2.9	5.9	7.9	9.0

Real Discount Rate = 2%

Bankruptcy Rate					
0.5%	0.0%	0.6%	1.3%	1.8%	2.0%
1.0	0.0	1.3	2.6	3.4	3.9
1.5	0.0	1.8	3.7	5.0	5.6
2.0	0.0	2.4	4.9	6.4	7.3
2.5	0.0	3.0	6.0	7.8	8.8
3.0	0.0	3.5	7.0	9.1	10.2

Real Discount Rate = 4%

Bankruptcy Rate					
0.5%	0.0%	0.8%	1.6%	2.1%	2.4%
1.0	0.0	1.6	3.1	4.0	4.5
1.5	0.0	2.3	4.5	5.8	6.5
2.0	0.0	3.0	5.8	7.4	8.3
2.5	0.0	3.6	7.0	9.0	10.0
3.0	0.0	4.2	8.1	10.4	11.5

Real Discount Rate = 6%

Bankruptcy Rate					
0.5%	0.0%	1.0%	1.9%	2.5%	2.8%
1.0	0.0	1.9	3.7	4.7	5.2
1.5	0.0	2.8	5.3	6.7	7.4
2.0	0.0	3.5	6.7	8.5	9.4
2.5	0.0	4.3	8.1	10.2	11.2
3.0	0.0	4.9	9.3	11.7	12.3

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EXHIBIT C-4

PERCENTAGE OF TOTAL TRUST FUNDS NOT COLLECTED
INDUCED CLOSURES ONLY

	Length of Trust (Years)				
	1	5	10	15	20
Full Closure					
Recovery					
0%	21.5%	13.1%	8.4%	4.8%	2.8%
25%	16.1	9.8	6.3	3.6	2.1
50%	10.8	6.6	4.2	2.4	1.4
Half Closure					
Recovery					
0%	10.8%	6.6%	4.2%	2.4%	1.4%
25%	8.1	5.0	3.2	1.8	1.1
50%	5.4	3.3	2.1	1.2	0.7

EXHIBIT C-5
PERCENTAGE OF TOTAL TRUST FUNDS NOT COLLECTED

Real Discount Rate = 0%

Full Closures
0% Recovery

	Length of Trust (Years)				
Bankruptcy Rate	1	5	10	15	20
0.5%	21.5%	14.0%	10.3%	7.7%	6.1%
1.0	21.5	14.8	12.2	10.3	9.2
1.5	21.5	15.7	14.0	12.8	12.2
2.0	21.5	16.5	15.8	15.3	15.0
2.5	21.5	17.3	17.6	17.6	17.7
3.0	21.5	18.1	19.2	19.9	20.3

Real Discount Rate = 2%

Bankruptcy Rate					
0.5%	26.7%	17.8%	13.2%	9.7%	7.6%
1.0	26.5	18.6	15.3	12.7	11.1
1.5	26.3	19.5	17.4	15.6	14.5
2.0	26.1	20.3	19.3	18.3	17.6
2.5	25.9	21.1	21.1	20.8	20.5
3.0	25.7	21.9	22.9	23.2	23.3

Real Discount Rate = 4%

Bankruptcy Rate					
0.5%	32.3%	22.1%	16.6%	12.1%	9.3%
1.0	31.8	22.9	18.8	15.5	13.3
1.5	31.3	23.7	21.0	18.6	17.0
2.0	30.8	24.4	23.0	21.5	20.4
2.5	30.4	25.2	25.0	24.2	23.5
3.0	30.0	25.9	26.8	26.7	26.4

Real Discount Rate = 6%

Bankruptcy Rate					
0.5%	38.0%	26.7%	20.3%	14.8%	11.3%
1.0	37.1	27.4	22.7	18.5	15.7
1.5	36.3	28.1	24.9	21.8	19.7
2.0	35.6	28.7	27.0	24.9	23.3
2.5	34.9	29.4	28.9	27.7	26.6
3.0	34.3	30.0	30.7	30.3	29.6

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EXHIBIT C-6
PERCENTAGE OF TOTAL TRUST FUNDS NOT COLLECTED

Real Discount Rate = 0%

Full Closures
25% Recovery

	Length of Trust (Years)				
Bankruptcy Rate	1	5	10	15	20
0.5%	16.1%	10.5%	7.8%	5.7%	4.6%
1.0	16.1	11.1	9.2	7.7	6.9
1.5	16.1	11.7	10.5	9.6	9.1
2.0	16.1	12.4	11.9	11.5	11.2
2.5	16.1	13.0	13.2	13.2	13.3
3.0	16.1	13.6	15.2	14.9	15.2
Real Discount Rate = 2%					
Bankruptcy Rate					
0.5%	20.1%	13.3%	9.9%	7.3%	5.7%
1.0	19.9	14.0	11.5	9.5	8.3
1.5	19.7	14.6	13.0	11.7	10.8
2.0	19.6	15.2	14.5	13.7	13.2
2.5	19.4	15.9	15.9	15.6	15.4
3.0	19.3	16.5	17.2	17.4	17.5
Real Discount Rate = 4%					
Bankruptcy Rate					
0.5%	24.2%	16.5%	12.4%	9.1%	7.0%
1.0	23.8	17.2	14.1	11.6	10.0
1.5	23.5	17.7	15.7	13.9	12.7
2.0	23.1	18.3	17.3	16.1	15.3
2.5	22.8	18.9	18.7	18.1	17.6
3.0	22.5	19.4	20.1	20.0	19.8
Real Discount Rate = 6%					
Bankruptcy Rate					
0.5%	28.5%	20.0%	15.2%	11.1%	8.4%
1.0	27.8	20.5	17.0	13.9	11.8
1.5	27.2	21.0	18.7	16.4	14.8
2.0	26.7	21.5	20.2	18.7	17.5
2.5	26.2	22.0	21.7	20.8	19.9
3.0	25.7	22.5	[redacted]	22.7	22.2

EXHIBIT C-7
PERCENTAGE OF TOTAL TRUST FUNDS NOT COLLECTED

Real Discount Rate = 0%

Full Closures
50% Recovery

	Length of Trust (Years)				
Bankruptcy Rate	1	5	10	15	20
0.5%	10.8%	7.0%	5.2%	3.8%	3.0%
1.0	10.8	7.4	6.1	5.1	4.6
1.5	10.8	7.8	7.0	6.4	6.1
2.0	10.8	8.3	7.9	7.6	7.5
2.5	10.8	8.7	8.8	8.8	8.8
3.0	10.8	9.1	9.6	9.9	10.1

Real Discount Rate = 2%

Bankruptcy Rate					
0.5%	13.4%	8.9%	6.6%	4.9%	3.8%
1.0	13.3	9.3	7.7	6.4	5.6
1.5	13.1	9.7	8.7	7.8	7.2
2.0	13.0	10.2	9.6	9.1	8.8
2.5	12.9	10.6	10.6	10.4	10.3
3.0	12.9	11.0	11.5	11.6	11.6

Real Discount Rate = 4%

Bankruptcy Rate					
0.5%	16.2%	11.0%	8.3%	6.1%	4.7%
1.0	15.9	11.4	9.4	7.7	6.7
1.5	15.6	11.8	10.5	9.3	8.5
2.0	15.4	12.2	11.5	10.7	10.2
2.5	15.2	12.6	12.5	12.1	11.7
3.0	15.0	13.0	13.4	13.4	13.2

Real Discount Rate = 6%

Bankruptcy Rate					
0.5%	19.0%	13.4%	10.1%	7.4%	5.6%
1.0	18.6	13.7	11.3	9.2	7.8
1.5	18.2	14.0	12.4	10.9	9.8
2.0	17.8	14.4	13.5	12.4	11.6
2.5	17.5	14.7	14.5	13.8	13.3
3.0	17.1	15.0	15.4	15.1	14.8

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EXHIBIT C-8
PERCENTAGE OF TOTAL TRUST FUNDS NOT COLLECTED

Half Closures
0% Recovery

Real Discount Rate = 0%

	Length of Trust (Years)				
Bankruptcy Rate	1	5	10	15	20
0.5%	10.8%	7.5%	6.2%	5.3%	4.7%
1.0	10.8	8.4	8.2	8.0	7.9
1.5	10.8	9.3	10.1	10.6	10.9
2.0	10.8	10.2	12.0	13.1	13.7
2.5	10.8	11.1	13.8	15.5	16.5
3.0	10.8	12.0	15.5	17.8	19.1

Real Discount Rate = 2%

Bankruptcy Rate					
0.5%	13.8%	9.7%	8.0%	6.6%	5.8%
1.0	13.7	10.7	10.3	9.8	9.4
1.5	13.6	11.8	12.5	12.8	12.9
2.0	13.4	12.7	14.6	15.6	16.1
2.5	13.3	13.7	16.6	18.2	19.1
3.0	13.2	14.6	18.5	20.8	21.9

Real Discount Rate = 4%

Bankruptcy Rate					
0.5%	17.4%	12.3%	10.1%	8.2%	7.0%
1.0	17.0	13.4	12.7	11.8	11.1
1.5	16.7	14.5	15.1	15.2	15.0
2.0	16.4	15.5	17.4	18.2	18.5
2.5	16.1	16.5	19.6	21.1	21.7
3.0	15.9	17.5	21.6	23.8	24.7

Real Discount Rate = 6%

Bankruptcy Rate					
0.5%	21.2%	15.3%	12.5%	10.0%	8.4%
1.0	20.6	16.4	15.4	14.1	13.1
1.5	20.1	17.5	18.0	17.7	17.3
2.0	19.5	18.6	20.5	21.1	21.1
2.5	19.1	19.6	22.8	24.1	24.5
3.0	18.7	20.5	24.9	26.9	27.6

EXHIBIT C-9
PERCENTAGE OF TOTAL TRUST FUNDS NOT COLLECTED

Half Closures
25% Recovery

Real Discount Rate = 0%

Bankruptcy Rate	Length of Trust (Years)				
	1	5	10	15	20
0.5%	8.1%	5.6%	4.7%	4.0%	3.5%
1.0	8.1	6.3	6.1	6.0	5.9
1.5	8.1	7.0	7.6	7.9	8.2
2.0	8.1	7.7	9.0	9.8	10.3
2.5	8.1	8.3	10.3	11.6	12.4
3.0	8.1	9.0	12.9	13.4	14.3

Real Discount Rate = 2%

Bankruptcy Rate					
0.5%	10.4%	7.3%	6.0%	5.0%	4.3%
1.0	10.3	8.1	7.7	7.3	7.1
1.5	10.2	8.8	9.4	9.6	9.6
2.0	10.1	9.6	10.9	11.7	12.0
2.5	10.0	10.3	12.4	13.7	14.3
3.0	9.9	11.0	13.9	15.6	16.4

Real Discount Rate = 4%

Bankruptcy Rate					
0.5%	13.0%	9.2%	7.6%	6.2%	5.3%
1.0	12.8	10.1	9.5	8.9	8.4
1.5	12.5	10.9	11.3	11.4	11.2
2.0	12.3	11.7	13.1	13.7	13.9
2.5	12.1	12.4	14.7	15.8	16.3
3.0	11.9	13.1	16.2	17.8	18.6

Real Discount Rate = 6%

Bankruptcy Rate					
0.5%	15.9%	11.5%	9.4%	7.5%	6.3%
1.0	15.5	12.3	11.5	10.6	9.8
1.5	15.0	13.1	13.5	13.3	13.0
2.0	14.7	13.9	15.4	15.8	15.8
2.5	14.3	14.7	17.1	18.1	18.4
3.0	14.0	15.4	18.7	20.2	20.7

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EXHIBIT C-10
PERCENTAGE OF TOTAL TRUST FUNDS NOT COLLECTED

Half Closures
50% Recovery

Real Discount Rate = 0%

	Length of Trust (Years)				
Bankruptcy Rate	1	5	10	15	20
0.5%	5.4%	3.7%	3.1%	2.6%	2.4%
1.0	5.4	4.2	4.1	4.0	3.9
1.5	5.4	4.7	5.0	5.3	5.4
2.0	5.4	5.1	6.0	6.5	6.9
2.5	5.4	5.6	6.9	7.8	8.2
3.0	5.4	6.0	7.8	8.9	9.6

Real Discount Rate = 2%

Bankruptcy Rate					
0.5%	6.9%	4.9%	4.0%	3.3%	2.9%
1.0	6.8	5.4	5.1	4.9	4.7
1.5	6.8	5.9	6.2	6.4	6.4
2.0	6.7	6.4	7.3	7.8	8.0
2.5	6.7	6.8	8.3	9.1	9.5
3.0	6.6	7.3	9.3	10.4	10.9

Real Discount Rate = 4%

Bankruptcy Rate					
0.5%	8.7%	6.2%	5.0%	4.1%	3.5%
1.0	8.5	6.7	6.3	5.9	5.6
1.5	8.3	7.3	7.6	7.6	7.5
2.0	8.2	7.8	8.7	9.1	9.3
2.5	8.1	8.3	9.8	10.6	10.9
3.0	7.9	8.7	10.8	11.9	12.4

Real Discount Rate = 6%

Bankruptcy Rate					
0.5%	10.6%	7.6%	6.2%	5.0%	4.2%
1.0	10.3	8.2	7.7	7.0	6.6
1.5	10.0	8.8	9.0	8.9	8.6
2.0	9.8	9.3	10.2	10.5	10.5
2.5	9.5	9.8	11.4	12.1	12.3
3.0	9.3	10.3	12.4	13.5	13.8

Appendix D

NUMBER OF PLANT CLOSURES IN SELECTED INDUSTRY SEGMENTS RESULTING FROM COLLECTING TRUST FUNDS OVER DIFFERENT TIME PERIODS

The number of plants that will choose to close rather than comply with an EPA regulation is a function of the cost imposed on the plants by the regulation. Collecting trust funds over a shorter time period increases the cost of the regulation; shorter periods for trust fund build-ups should therefore lead to a higher closure rate.

The staff attempted to quantify the relationship between length of trust fund buld-up and plant closures for segments of the leather tanning and textiles industries. From the models used to compute the cost of the interim status standards Arthur D. Little, Inc. calculated the incremental cost of RCRA imposed by the interim status regulations as inputs into Development Planning and Research Associtês plan closure models for the leather and textile industries.

The following table shows the results of this analysis.

NUMBER OF PLANT CLOSURES IN SELECTED INDUSTRY SEGMENTS RESULTING FROM COLLECTING TRUST FUNDS OVER DIFFERENT TIME PERIODS

Industry and Segment	Number of Closures Trust Fund Build Up (Duration)					Number of Plants Disposing On-Site
	1	2	5	10	20	
Leather Tanning						
Chrome Pulp	1	1	0	0	0	25
Vegetable Non-Chrome	4	3	3	3	0	8
Sheep	4	4	3	1	0	9
(Total Leather)	9	8	6	4	0	42
Textiles						
Hosiery - Own Fabric	4	4	4	4	3	12
Yarn & Stock	10	8	4	1	0	53
(Total Textiles)	14	12	8	5	3	65
Total Segments	23	20	14	9	3	107

Data provided by Richard Seltzer of Development Planning and Research Associates on August 27, 1980. DPRA calculated closures by running RCRA cost numbers provided by Arthur D. Little through DPRA impact models of Leather Tanning and Textile Industries.

Appendix E

NUMBER OF EXISTING HAZARDOUS WASTE MANAGEMENT FACILITIES THAT WOULD USE TRUST FUNDS

The Regulatory Analysis accompanying the RCRA C Phase I Standards published in the *Federal Register* on May 19, 1980 indicated that the Agency's RCRA C Economic Impact Analysis for these rules covered about 29,000 generators of hazardous waste. The staff estimated the number of these generators who would use trust funds for RCRA C financial assurance by assuming: 30 percent of the 29,000 generators would dispose of their waste on site and 50 percent of the on-site generators would use trust funds as opposed to any other financial assurance mechanism. This results in an estimate of 4350 trust fund users.

Considering that the economic analysis did not cover all generators of hazardous waste, the staff believes that the estimate provided here is probably low, but sufficient for illustrative use in the "Cost of a Wrong Decision" analysis in this background document.

INTERIM AND GENERAL STANDARD LIABILITY REQUIREMENTS

I. INTRODUCTION

The Environmental Protection Agency is issuing final regulations on financial responsibility requirements for the operating life liability of interim status and general (permitted) status facilities.* The permitted status regulations were initially proposed on December 18, 1978 (FR59007, Vol. 43, No. 243). The interim status regulations were proposed on May 19, 1980 (FR 33273, Vol. 45, No. 98). At that time the Agency also reopened the comment period on the regulations affecting permitted status facilities. EPA had received many comments in response to the proposed permitted status regulations and had analyzed the issues raised. The Agency felt that analysis of these issues would benefit from further public comment. In addition, because the issues raised by the proposed interim status regulations have so much in common with those raised by the proposed permitted status standards, the Agency felt that the public should be given an opportunity to comment on the entire set of financial responsibility regulations at one time.

Comments have been received on the proposed regulations that ranged from questioning the need for such regulations to questioning many of the specific requirements of the regulations. EPA has given considerable thought to the comments and has analyzed further some of the issues identified by the comments.

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* Facility owners or operators are deemed to be in "interim status" until the date final administrative action is taken on their permit application. Approved facilities pass into "permitted status."

In addressing these issues, the Agency has tried to provide adequate protection to human health and the environment and yet ensure that no owner or operator is precluded from owning or operating a facility by standards that do not reflect the "degree and duration" of risk at such facilities. The two objectives have conflicted at times and the Agency has sought to achieve the best balance feasible. The most important aspects of the final liability requirements are as follows:

- Non-sudden incidents could occur at some interim status facilities and these facilities must therefore secure insurance coverage against non-sudden incidents.
- Non-sudden coverage is required during interim status and during permitted status only for land disposal facilities--surface impoundments, landfills, and land treatment facilities; the nature of the problem indicates that the majority of non-sudden incidents will be restricted to such facilities. However, the Regional Administrator may extend the non-sudden requirement to other facilities if those facilities pose risks of non-sudden accident.
- Potential lack of availability of non-sudden coverage to small facilities and the need to allow time for a viable market for non-sudden coverage to develop are of considerable concern to the Agency. The non-sudden insurance coverage requirement, therefore, is phased in over time. Owners or operators with annual sales greater than $10 million are required to obtain coverage within 6 months from the effective date of the regulations, i.e., one year from the date the regulations appear in the Federal Register. Correspondingly, the non-sudden coverage requirement is deferred by 18 months (two years from the Federal Register date) for owners or operators with annual sales between $5 and $10 million and by 30 months (three years from the Federal Register date) for all other owners or operators. During this time as well as subsequently, the Agency intends to monitor the insurance market. Currently, the Agency is working on back-up mechanisms such as federal provision of insurance and/or reinsurance. These mechanisms may be utilized if, in the future, the private sector insurance mechanism does not appear able to provide the liability coverage required by EPA's regulations.

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- The base amount of insurance coverage required is a minimum of $1 million per occurrence ($2 million annual aggregate) for sudden occurrences and a minimum of $3 million per occurence ($6 million annual aggregate) for non-sudden occurrences.
- A financial test is being considered to allow those facilities to "self-insure" who can provide adequate evidence of their financial strength. At present "self-insurance" is reserved but if promulgated EPA intends to adjust its effective date to coincide with the effective date of the rest of the regulation.
- A variance procedure is included for facility owners and operators who can demonstrate that the levels of required coverage do not adequately reflect the degree and duration of risk at their facilities. The procedure may take the form of a revision in the level of the required insurance amounts.
- A provision is included by which the Regional Administrator may revise upwards the required insurance amounts where it is felt that such a change would more accurately reflect the degree and duration of risk at a facility. The Regional Administrator may also require storage or treatment facilities to obtain non-sudden insurance coverage on a case-by-case basis.

The remainder of the background document proceeds as follows. Section II provides a rationale for the final regulations. Section III summarizes the standards as they were originally proposed. Section IV contains a summary of the comments received on each issue identified by the comments, the analysis of such issues, and the final decision taken in light of the analysis.

Key Definitions

Definitions which are necessary to an understanding of the regulation and this document are as follows:

> "occurrence" means an accident, including continuous or repeated exposure to conditions, which results in bodily injury or property damage which the owner or operator neither expected nor intended to occur.
>
> "sudden accident" means an unforeseen and unexpected occurrence which is not continuous or repeated in nature.

"non-sudden accident" means an unforeseen and unexpected occurrence which takes place over time and involve continuous or repeated exposure.

"occurrence-based policy" means an insurance policy that provides coverage for an event occurring during the term of the policy regardless of when the claim is filed.

"claims-made policy" means an insurance policy that provides coverage if a claim is filed while the policy is in force. This policy may cover events which occurred before the date the policy was first issued to a firm as well as events occurring while the policy is in force, or may be restricted to cover only events occurring while the policy is in force.

"legal defense costs" means the expenses that an insurer incurs in defending against claims brought under the terms and conditions of the policy.

"net worth" means the difference between total assets and total liabilities as measured by generally accepted accounting principles. Net worth is equivalent to owner's equity.

"generally accepted accounting principles" mean those accounting principles which have been given formal recognition or authoritative support in any particular jurisdiction (e.g., the American Institute of Certified Public Accountants in the U.S.).

"assets" mean debit balances carried forward upon a closing of books of account that represent property values or rights acquired; these are economic resources of an enterprise that are recognized and measured in accordance with generally accepted accounting principles. Assets also include certain deferred charges that are not resources but that are recognized and measured in conformity with generally accepted accounting principles.

"liabilities" mean to obligations carried forward upon closing of books of account that are economic obligations of an enterprise and are recognized and measured in conformity with generally accepted accounting principal. Liabilities also include certain deferred credits that are not obligations but that are recognized and measured in conformity with generally accepted accounting principles.

"working capital" means the excess of current assets over current liabilities.

"current assets" means cash and other assets that are reasonably expected to be realized in cash or sold or consumed during the normal operating cycle of the business or within one year if the operating cycle is shorter than one year.

"current liabilities" means liabilities expected to be satisfied by either the use of assets classified as current in the same balance sheet or the creation of other current liabilities; or those expected to be satisfied within a relatively short period of time, usually one year.

"total liabilities to net worth ratio" means the value of total liabilities, which includes the sum of short and long-term debts and obligations, divided by the value of net worth. This ratio indicates the degree of dependence of an enterprise on creditors rather than on owners for providing operating capital for the business.

"deductible" means the liability amount agreed upon between the insurer and the insured and which the insured must incur in the event of a policy claim.

"self-insurance" means the use of a financial test to provide evidence of financial responsibility in lieu of the liability insurance mechanism.

II. RATIONALE FOR REGULATION

A. EPA Authority and Basis for Regulation

Section 3004 of the Resource Conservation and Recovery Act of 1976 (P.L. 94-580) mandates that EPA promulgate regulations establishing performance standards, applicable to owners and operators of facilities for the treatment, storage, and disposal of hazardous waste. Section 3004(b) states that the standards to be promulgated by the EPA shall include requirements respecting:

> "the maintenance of operation of such facilities and requiring such additional qualifications as to ownership, continuity of operation, training for personnel, and financial responsibility as may be necessary or desirable;"

EPA has interpreted the term financial responsibility to include the ability to pay for injuries to third parties and property which result from the operation of hazardous waste management facilities. Congressional intent that financial responsibility requirements should include provisions to meet third party liability if the hazardous waste material escapes storage is indicated in the Senate report accompanying the Solid Waste Utilization Act of 1976 (which was the Senate version of what was to become RCRA). The Senate Public Works Committee report noted in describing the bill:

> "One of the specific conditions ... is the requirement that facilities providing treatment, disposal, or storage of hazardous wastes meet minimum qualifications on ownership, financial responsibility, and continuity of operations. In a situation where the best accepted method of dealing with a hazardous waste may be long-term stabilized storage, a permit must contain provisions to assure that the storage site will be maintained over that period. In addition, there must be adequate evidence of financial responsibility, not only for operation of the site, but also to provide against any liability if the material escapes the storage." (Solid Waste Utilization Act of 1976. Report of the Committee on Public Works together with Individual Views to Accompany S. 3622. Senate Report 94-988, 94th Congress, 2d. Session, 1976, p. 16.)

EPA interprets the use of the term "storage" by the Senate in the above report as the management (i.e., storage, disposal, treatment) of hazardous waste.

The language of the report, "long-term stabilized storage," suggests that the Senate intended to cover long-term management practices such as land filling of wastes within the meaning of the word, "storage."

EPA's authority to promulgate "necessary or desirable" standards under Section 3004(b) is qualified by the last paragraph of Section 3004:

> "No private entity shall be precluded by reason of criteria established under paragraph (b) from the ownership or operation of facilities providing hazardous waste treatment, storage, or disposal services where such entity can provide assurances of financial responsibility and continuity of operation consistent with the degree and duration of risks associated with the treatment, storage, or disposal of specified hazardous waste."

EPA interprets this paragraph to mean that private companies cannot be arbitrarily precluded from the ownership or operation of hazardous waste management facilities where as a result of criteria established by the Agency such companies can provide assurances of financial responsibility and continuation of operation consistent with the degree and duration of risks associated with their facilities. An example of an arbitrary exclusion would be a regulation which provided that only states could own and operate hazardous waste management facilities. The Agency, in setting levels of financial responsibility and allowing variances from those levels, will take into consideration the degree and duration of risks associated with hazardous waste management, as mandated by Section 3004. This point is further elaborated in Section IV.G. of this document.

B. Need for the Regulation

Sudden and non-sudden accidents could occur virtually any time during the operating life of a hazardous waste management facility. When a hazardous waste site damage incident is discovered, the site owner or operator may be immediately faced with a number of financial demands. There may be third-party damage claims and possibly court suits. In addition, the local community or the state may sue to force clean-up of the site, to require continued monitoring of water supplies, and to have medical examinations performed on residents who may have been affected. An accident requiring site clean-up actions, therefore, could prove to be a major financial burden on site owners and operators. Any funds spent on site clean-up would erode the firm's financial base that could be used to pay any consequent damages. If these owners or operators have insufficient financial resources to pay for damages, private parties or the government may be forced to pay them. In many of the hazardous waste damage incidents described below, when problems were first discovered by the local community and funds were needed, the parties responsible were found to have gone out of business, had vanished, had insufficient financial resources, or disclaimed responsibility because they were no longer the current owners of the facility.

Analysis of EPA damage report files revealed 90 incidents of damage at hazardous waste management facilities. Facilities involved in these accidents were both "on-site" (adjacent to manufacturing facilities) and off-site; they were treatment, storage and disposal facilities; they were owned by small, independent operators as well as by large corporations. (An overall summary of the 90 damage incidents is provided as Appendix A to the Background Document for Final and Reproposed Financial Requirements, Part 265 Subpart H, April 25, 1980.)

The damage report files indicate that 17 percent of the incidents occurred suddenly. Most of these incidents (13 of 15) took place on sites which were operating at the time, and the majority were on sites operated in conjunction with manufacturing operations. The more frequent sudden incidents involved the collapse of a dike supporting a wastewater lagoon and the subsequent contamination of soil or surface waters and involved spills or waste discharges onto the ground causing soil contamination. Reported explosions, fires, and toxic fumes, which were the only incidents causing immediate deaths, occurred in off-site hazardous waste management facilities where different wastes were mixed. Where sudden incidents were reported, groundwater contamination was not an immediate problem except where gradual leaching had also occurred over long periods of time.

Most of the hazardous waste site incidents (83 percent) were gradual (non-sudden) in that the actions and the damage occurred over a long period of time. When the damage was discovered, 40 percent of the sites had already been closed or abandoned. The more frequent gradual incidents involved improper dumping on the ground or burial of untreated hazardous wastes, leakages from unlined settling or storage ponds and leakages from rusting drums and tanks without any back-up containment facilities. As with sudden incidents, the majority of gradual incidents in the EPA files occurred on sites operated in conjunction with manufacturing operations. Inevitably the result was contamination of the soil and either surface or groundwater or both.

Since many of the incidents reported to EPA have not been thoroughly investigated, damage and clean-up cost estimates exist for only a portion of the reported incidents. Cost estimates are generally more complete for the more serious incidents because those incidents have been more fully investigated by EPA. In order to improve the cost information available on the 90 damage cases in the EPA files, efforts were made to contact individuals in organizations at the federal, state, and local level who were directly involved in the case investigations.

Table 1 contains a summary of the costs in 1979 dollars from the 52 damage cases for which clean-up or third-party damage cost estimates could be obtained.1/ Nineteen of these cases were the subject of detailed case studies published by EPA.2/ For these cases, Level I and Level II clean-up cost estimates were available. As defined by EPA, Level I clean-up actions are designed to alleviate existing damages to groundwater and third-parties. Level II clean-up actions are designed to prevent future damage to groundwater or third-parties due to contaminant migration through the soil. The cost estimates available for the other cases included actual costs incurred, damage suit settlement amounts, and clean-up cost estimates for planned actions. Since the incidents reported are often those with the most serious damage, the cost estimates generally represent the maximum level of costs which would be incurred to clean-up and pay third-party claims on unregulated hazardous waste management sites.

An investigation of the 15 sudden incidents identified only two cases where third-party damages could be quantified. Four million fish, valued at

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1/ ICF Incorporated, *Review and Analysis of Hazardous Waste Site Clean-Up and Third-Party Damage Costs*, March 14, 1980.

2/ EPA, *Preliminary Assessment of Clean-Up Costs for National Hazardous Waste Problems*, 1979.

TABLE 1

SUMMARY OF EPA DAMAGE REPORTS FOR WHICH CLEAN-UP AND THIRD PARTY DAMAGE COST ESTIMATES COULD BE OBTAINED

(1979 dollars)

		Clean-Up Costs			Cost of Damages**		
Type of Incident	Total Incidents	Number of Incidents	Average Cost Incurred*	Range of Cost Estimates*	Number of Incidents	Average Cost Incurred*	Range of Cost Estimates*
Sudden	15	6	$277,700	$8,700-519,900	2	$218,000	$216,500-220,000
Gradual	75	42	1.64 million	24,800-200 mill.	9	539,000	$11,700-3 million
	90	48			11		

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* Upper bound of cost estimates are Level II estimates for complete waste removal and redisposal at a secured facility, while average cost incurred relates to actions already taken or which are to be taken.

** Does not include pending court suits, some of which seek over $1 billion in damages.

Source: ICF Incorporated, "Review and Analysis of Hazardous Waste Site Clean-Up and Third-Party Damage Costs," March 14, 1980.

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$216,500 (1979 dollars), were killed when the collapse of a lagoon dike led to a temporary contamination of surface water.[1] Six deaths and many injuries were reported when twelve tanks explodedat a site in New Jersey.[2] This case is currently under litigation. Conversations with the lawyers of the injured parties indicate that compensation might be around $1-2 million for all parties in the aggregate. One party reportedly has recently settled for $220,000. Other sudden incidents in Ohio, Pennsylvania, Texas, Illinois, and other states have resulted in actual and potential contamination of groundwater and damage to aquatic life. Since most sudden incidents involve relatively small quantities of waste, discharges into the soil or surface water do not cause the permanent surface or groundwater damage generally associated with major third-party damage claims.

An investigation of the 75 non-sudden incidents identified many cases of potential and proven groundwater contamination. Although some very large damage suits have been filed to date, no significant health damages have been awarded by the courts. Consequently, the significant third-party damage costs are associated with the cost of water supply replacement and to a lesser degree with the loss in value of property adjacent to hazardous waste disposal sites. Excluding the Hooker Chemical site cases,[3] the largest third-party

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1/ The problem was discovered in 1968 in Pennsylvania and involved the American International Refining Corp.

2/ The firm involved was Rollins Environmental Services in Bridgeport, New Jersey.

3/ The cost estimates cited in the Hooker Chemical cases do not distinguish between clean-up, monitoring, and third-party damages, but third-party damages have exceeded $3 million at the Love Canal site.

damage cost to date is $3 million at a site operated by the Story Chemical Company in Michigan. In this case, many years of dumping and burying untreated chemicals led to the contamination of groundwater used as a source of drinking water.[1] Efforts to provide affected individuals with uncontaminated water from new wells failed, and safe water must now be transported a considerable distance to 36 homes in a sparsely populated area. In other situations where contaminated wells have been replaced with new wells, the total third-party damage costs have not exceeded $136,000 (1979 dollars).

Despite the lack of significant third-party damage cost awards in the past, a growing number of court suits are being filed and some request damages in excess of $1 billion. If any of these suits are even partly successful, the potential third-party damage costs associated with operating existing hazardous waste disposal sites could become very large in magnitude.

The environmental problems which have occurred on unregulated hazardous waste management sites in the past have been due in most cases to poor management practices. The most prevalent incident in the files is simple dumping or burial of untreated wastes with no effort to prevent leaching of chemicals from the site. The truly major costs in the past have been due to massive groundwater contamination and the oozing of liquid wastes into homes built on closed or abandoned waste sites.

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[1] The problem was discovered in 1977. Efforts to deal with the problem are still ongoing.

For many reasons, the frequency of occurrence and the severity of damage of hazardous waste site incidents should be much lower in the future. Even without the RCRA regulations, increased public attention to the problem of hazardous waste disposal is causing hazardous waste site operators to improve their practices. Additionally, in order to obtain permits to operate hazardous waste disposal sites under the general status regulations, operators will have to make a large number of changes in their sites' structural characteristics that should make the type of incidents which have occurred in the past less likely to occur. When accidents or unintended gradual incidents do occur, the new site structural characteristics and periodic inspections by EPA personnel required by the regulations, should greatly reduce the damage.

It may be that future problems are unlikely to approach the magnitude of the problems in the Hooker cases. Nevertheless, serious problems occasionally may arise in the future. Any serious future problems are likely to be primarily associated with groundwater contamination because unless a groundwater problem arises, there rarely will be any way of knowing that a major problem exists on a permitted site. The groundwater contamination problem at the Story Chemical Company site in Michigan provides one example of possible future problems. Once wastes leach and contaminate ground water that is used as a source of drinking water, alternative sources of supply may be quite expensive to use. The Story Chemical Company case provides cost estimates of piping in drinking water over considerable distance from the nearest town. Since the possibility of such a problem occurring in the future remains despite RCRA regulations, and since such a problem has proven to be one of the most expensive to rectify, the cost estimates of the Story Chemical Company incident provide an upper estimate of the likely financial magnitude of future problems.*

Independent of EPA's analysis of the hazardous waste site problems, many states have conducted parallel analyses of their own. As a result, four state, Washington, Oregon, Oklahoma, and Kansas, require sites to obtain liability insurance. South Carolina and Illinois are currently considering instituting insurance requirements. Four other states, California, Texas, Wisconsin, and Maryland, require hazardous waste sites to post a bond for closure or to make periodic contributions to a waste management fund. These state regulations provide further support for EPA's position that financial responsibility requirements are necessary for hazardous waste management sites.

C. Alternative Regulatory Mechanisms

EPA explored many regulatory mechanisms which could potentially be used to deal with the financial responsibility problem. The Agency was guided in its efforts by federal and state requirements that have purposes similar to those of the liability requirements. These requirements served as potential regulatory solutions. EPA's review of these requirements ensured that no financial instrument which might be viable would be overlooked by the Agency. In a few cases, information about experience in implementing these programs was valuable in pointing out the strengths and weaknesses of the various alternatives. The following is a summary of relevant regulations which the Agency examined:

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* ICF Incorporated, Review and Analysis of Hazardous Waste Site Clean-Up and Third Party Damage Costs, March 16, 1980.

1. Federal Maritime Commission Regulations. Under Section 311 of the Clean Water Act, the Federal Maritime Commission (FMC) has issued regulations "whereby vessel operators can demonstrate that they are financially able to meet their liability to the United States resulting from the discharge of oil or hazardous substances" into waters over which the United States has jurisdiction (46 CFR § 542.1(b)). The regulations require vessel operators to select a financial mechanism approved by the FMC to ensure that they will be able to meet potential obligations arising from spills.

The FMC regulations allow the following mechanisms for meeting the financial responsibility requirement: (1) insurance, (2) surety bonds, (3) self-insurance, based on maintaining specified levels of net worth and working capital, in the United States, (4) a guarantee, where the guarantor meets the specifications for self-insurance, and (5) other evidence of financial responsibility. In practice, no other acceptable method has yet been found for the last category.

The FMC regulations concerning financial responsibility for water pollution have been in effect since August 1971. By far the most frequently used mechanism is insurance, followed by self-insurance, the guarantee, and surety bonds. To determine threshhold eligibility of surety companies, the FMC uses the U.S. Treasury list of surety companies (Circular 570).[1]

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[1] Meeting between Federal Maritime Commission staff and EPA staff on financial responsibility requirements, November 16, 1979.

2. Liability Insurance Requirements for the Nuclear Industry. To protect the public from damages from a possible accident involving nuclear facilities, Congress required the operators of nuclear power plants and certain other nuclear facilities to secure liability insurance. The risks to be covered were of a magnitude that were beyond the financial resources of a single company. Insurance companies, therefore, created special "pools" where a group of companies pledged assets that together could provide adequate resources to insure nuclear risks. Congress felt, however, that damage from a nuclear accident could potentially exceed the amount of liability insurance available from the nuclear pools. To protect the public against that contingency and to prevent the liability potential from discouraging investment in nuclear power, Congress enacted the Price Anderson Act. This Act limited the liability of nuclear reactor facilities to $560 million. Since private insurance companies were unable to provide that much liability coverage, the Nuclear Regulatory Commission (NRC) was authorized to indemnify operators of nuclear reactors for that portion of any liability claims which exceed the pool's policy limits up to the $560 million limit on liability. Reactor operators pay a fee to the government for this indemnification. It is anticipated that NRC's role as an indemnitor for nuclear reactor will decline with gradual increases in the capacity of the private insurance industry to provide the requisite amount of coverage.*

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* American Nuclear Insurers, Insurance for the Nuclear Industry, undated.

3. Federal Strip Mine Regulations. The U.S. Department of the Interior issued regulations (30 CFR 800-809) in March 1979 under authority of the Surface Mining and Reclamation Act of 1977, requiring that surface coal mining companies obtain a performance bond as certification that the mining activities will be conducted in accordance with certain performance standards.

The permanent regulations are scheduled to become effective in 1981. At present, interim programs are being operated by states. It appears that strip mine operators have had difficulty in obtaining performance bonds to comply with the state programs. The surety industry has suffered severe losses in the past five years from defaults due to inflation-induced financial failures.* This has resulted in increasing reluctance to provide bonds without stringent collateral requirements.

4. Insurance Programs Managed by the Federal Authorities Riot Insurance. In the aftermath of urban riots in the 1960's, many insurers were no longer willing to provide property insurance in urban neighborhoods. Congress acted to correct this problem through the Urban Property Protection and Reinsurance Act of 1968. This Act authorized the Federal Insurance Administration (FIA) to provide reinsurance for property losses resulting from riots to insurers who agree to participate in state FAIR plans. State FAIR plans establish state-wide insurance pools through which all participating insurers share equitably in the risks insured by the pool. Flood Insurance: Flood insurance was characterized by availability and/or affordability

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* Conversations with surety industry officials.

problems. FIA acted to solve these problems by setting up insurance pools to handle flood insurance. After about eight years of effort, the pool approach proved inadequate and a federally run program was introduced.

5. State Hazardous Waste Site Requirements. Many states have promulgated or are in the process of formulating financial responsibility regulations for hazardous waste sites. Four states, Washington, Oregon, Oklahoma and Kansas require sites to obtain liability insurance in addition to posting a bond for closure. South Carolina and Illinois are currently considering instituting an insurance requirement. Four other states, California, Texas, Maryland and Wisconsin, require hazardous waste sites to post a bond for closure or to make periodic contributions to a waste management fund.

D. EPA Hazardous Waste Site Requirements

Different instruments have been utilized by the various federal and state agencies in dealing with problems of financial responsibility depending upon the specific nature of the problem at hand. Financial liability at operating hazardous waste sites may require, with a low probability, the payment of large sums of money. Liability insurance is the instrument most commonly used to deal with such problems of financial risk. Insurance can be handled through the private sector or through public funds.

Insurance, in many cases, is routinely provided by the private sector. Through insurance of a large number of firms, the insurance industry is often able to provide liability compensation to a single firm at reasonable cost.*

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* The insurance industry does not normally accept risks, it merely spreads them over a large number of policy holders enabling the industry to provide low cost risk protection.

Though insurance is sometimes unavailable and/or unaffordable for some kinds of risks and under some conditions, there are many ways of rectifying these problems to ensure availability and affordability. Self-insurance is one mechanism which can be used by some firms to obtain liability insurance at lower cost. Some other mechanisms are reduction of risk through loss control programs and spread of risk through reinsurance and other programs. In addition, the insurance industry is used to handling compensation claims from injured parties. Consequently, with private sector liability insurance, no separate institutional mechanism has to be set up to process claims.

Alternatively, public funds could be used to provide liability insurance in lieu of the private sector. Congress has recently adopted "superfund"--a national fund designed in part to address the problems created by abandoned sites.* It may be possible, therefore, to expand superfund coverage to include compensation to parties injured by accidents at operating sites. A new fund could also be created for this purpose. In any case, however, the Agency presently has no authority to set up a national fund to address problems at operating sites. Accordingly, the Agency prefers to rely on the private sector. In the event that none of the private sector mechanisms can be successfully utilized, the Agency may explore the feasibility of federally provided insurance.

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* The problem of post-closure liability may also be addressed through the superfund (S.1480).

III. SYNOPSIS OF PREVIOUSLY PROPOSED REGULATIONS

The proposed regulations for permitted status hazardous waste facilities (FR 59007, December 18, 1978) required the owners and operators of such facilities to establish financial responsibility for sudden and for non-sudden occurrences to meet claims arising out of injury to persons or property from the operations of these facilities. The required amount was $5 million per occurrence, exclusive of legal defense costs, for sudden occurrences and $5 million per occurrence ($10 million annual aggregate) for non-sudden occurrences. Financial responsibility for sudden occurrences had to be maintained for each facility; financial responsibility in the stated amount for non-sudden occurrences was to be maintained for a facility or group of facilities. Financial responsibility could be established through evidence of liability insurance, self-insurance, or other evidence acceptable to the Regional Administrator.

Regulations subsequently proposed for interim status facilities (FR 33273, May 19, 1980) required the owners and operators of such facilities to secure liability insurance coverage for sudden occurrences only. The amount of required insurance was $1 million per occurrence ($2 million annual aggregate), exclusive of legal defense costs, for a facility or group of facilities. Interim status facilities were restricted to a 5 percent deductible in their insurance policy. Insurance coverage had to be obtained from an insurer licensed or eligible to insure facilities in the jurisdiction where any one facility was located.

IV. ANALYSIS OF COMMENTS AND RATIONALE FOR STANDARDS

Many comments were received on the proposed regulations. These comments, the Agency's responses, and the rationale behind the final actions are discussed in this section. The section is organized according to the following topics:

A. Legal Authority
B. Need for the Regulations
C. Need for the Regulation for Specific Facilities
D. Regulatory Strategy
E. Use of Insurance as the Appropriate Regulatory Mechanism
F. Amount of Insurance
G. Availability of Insurance
H. Cost and Affordability of Insurance
I. Other Issues

A. Legal Authority

Issue: Has EPA exceeded its statutory authority by requiring financial responsibility to cover private damage suits?

Comments and Responses: The following comments were received which addressed this issue:

- Financial responsibility requirements to cover private damage suits exceed EPA's statutory authority. Such requirements would more appropriately be established by Congress.

- There is no explicit statement in the statutes allowing EPA to make this requirement and therefore this requirement should be deleted.

As discussed in Section II.A. above, RCRA requires EPA to include necessary or desirable financial responsibility requirements in its regulations. EPA believes that Congress intended that human health and the environment would best be protected when the costs of third party damage caused by the operations of hazardous waste facilities are borne by such facility owners and operators. Specifically, in the Report of the Senat Committee on Public Works, Congress mentions a need for a provision to meet any liability if stored hazardous wastes escape storage. The word "storage" EPA believes, is used to refer to the management (storage, disposal, treatment) of hazardous waste.

B. Need for the Regulation

Issue: Is there a financial responsibility problem?

Comments and Responses: The following comments were received which related to this issue:

- There is no financial responsibility problem in general and therefore no need for such requirements.
- There is no financial responsibility problem in the case of regulated sites and therefore no need for financial responsibility requirements for regulated sites.
- There is a financial responsibility problem and therefore there is a need for financial responsibility requirements.

Section II.B. above discusses 90 incidents of damage that took place on hazardous waste management sites (the appendix contains detailed accounts of each case). In many of these cases, when problems were discovered and funds were needed to rectify the problems, the funds were seldom made available by the responsible parties.

Some of the following cases outline the problem. Hooker Chemical Company waste facilities in New York have been the site of major problems. The company has spent far less in cleaning up the site than is actually

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required.[1] In addition, the Justice Department had to file suit against Hooker seeking damages for injured parties.[1] Until Hooker or other responsible parties are forced to provide the necessary funds, the state and injured parties have had to bear the burden. Story Chemical Company in Michigan declared bankruptcy and abandoned vast quantities of toxic waste on the site. A new owner agreed to spend $600,000 to clean up the site, but the nearby wells used by communities for drinking water have been polluted and an estimated $3 million is required to provide the community with safe drinking water. Another company, American International Refining Corporation of Pennsylvania declared bankruptcy thereby making it uncertain whether funds would be available to compensate parties injured from their improperly "stored" waste. These are just a few examples of what is evidently a very serious problem. EPA believes that its financial responsibility requirements will ease this problem by ensuring that necessary funds are available to compensate injured parties.

EPA does believe that the frequency of occurrence and the severity of damage of hazardous waste site incidents should be much lower in the future. EPA's regulations concerning site characteristics and operations are designed to ensure that this will be the case. Growing public awareness of hazardous waste site incidents will also exert pressure on site owners to perform better. Nevertheless, there is a distinct possibility that despite the best efforts of all concerned parties, incidents will continue to occur. It is towards this possibility and the likely consequences of these incidents that the financial responsibility requirements are directed. EPA firmly believes, therefore, as stated in the proposed regulation, that there may be a problem on some regulated sites. Consequently, the Agency believes that financial responsibility requirements are necessary for regulated sites both during interim status and during permitted status.

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[1] ICF, Inc. Review and Analysis of Hazardous Waste Site Clean Up and Third Party Damage Costs, March 14, 1980.

C. Need for the Regulation for Specific Facilities

Issue: Should some facilities be excluded from the insurance requirement?

Comments and Responses:

- o Exclude on-site facilities from the financial responsibility requirements because there is no risk of an accident at such facilities.

EPA disagrees with this comment. As discussed in Section II.B., the EPA damage case files clearly show that in the past hazardous waste incidents have occurred at both off-site and on-site facilities. There is no reason to believe that the situation will alter in the future. Similarly, there is no evidence to indicate that damage incidents are restricted primarily to facilities owned or operated by small, independent firms. As the appended case summaries show, incidents have occurred at facilities owned or operated by companies of all sizes ranging from small firms to one of the nation's largest hazardous waste management firms. Consequently, EPA believes that this comment does not necessitate a change in the regulation.

- o Exclude service stations because there is no history that such liability potentially exists.

EPA disagrees with this comment. The fact that no accidents have occurred in the past is not a perfect indicator of future accidents. There is always some likelihood that an accident may occur in the future. Nevertheless, EPA realizes that the financial responsibility requirements for storage facilities (as many service stations are likely to be) need not in all cases be as stringent as for land disposal facilities. Many storage facilities may pose no substantial risk of non-sudden accident, for instance, and such facilities will not be required to obtain non-sudden coverage. EPA has tailored its regulations to reflect the differences between facilities in types of risk, and therefore does not see any need to exclude service stations entirely from the requirements.

- Exclude utility industry because its already subject to detailed financial regulations by state and federal agencies and utilities cannot go bankrupt.

EPA disagrees with this comment. The utility industry may be subject to detailed financial regulations but those regulations are not primarily intended to ensure financial responsibility in the event that hazardous waste incidents cause damage to persons or property. While it may be true that utilities do not often become insolvent, the Three Mile Island incident clearly shows that a utility may face financial trouble and hence have difficulty meeting its financial obligations. Consequently, EPA believes that it must require utilities to meet the regulations.

- Public facilities should not be excluded due to taxing authority.

The Agency disagrees with this comment in regard to federal and state facilities but agrees in so far as local facilities (municipality-owned) are concerned. The Agency believes that state and federally-owned facilities will always have adequate resources (tax-based or otherwise) which can be utilized to provide liability compensation to injured parties. The Agency is, therefore, exempting these facilities from the financial responsibility requirements.

The financial strength of local entities (cities, counties, etc.) on the other hand, is not as certain. Some local governments do become insolvent. Consequently, in the liability requirements, local government facilities are treated no differently from private facilities. Many local government facilities indicated that they have set up funds which they use to self-insure their liability exposure. At present, the financial test required for self-insurance is reserved. If and when the self-insurance regulation is promulgated, these local government facilities, like private facilities, will be permitted to utilize the self-insurance option.

- Exclude storage facilities which are forced to store wastes somewhat over 90 days due to the requirements of bulk shipping arrangements.

EPA agrees in part with this comment. The Agency believes that the risks of a non-sudden incident should be minimal at most storage facilities. Such facilities, therefore, are now not required to obtain non-sudden insurance coverage. However, as long as there is some risk of sudden incidents at storage facilities, and EPA believes that there is such a risk, such

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facilities cannot be excluded from the sudden incident requirements. The Agency therefore believes that the regulations are sufficiently flexible to allow storage facilities to meet a level of requirements in a manner that would be appropriate to the risk characteristics of such facilities. In addition, if the risk of damage from a sudden incident at these facilities is very small, the insurance industry asserts that this fact will be reflected in the premiums. Further, if $1 million per occurrence of insurance seems to be too high in relation to the risk of incidents at the firm, then the firm may apply for a variance to have the required amounts of insurance adjusted downward for its facilities.

- o Do not exclude hazardous waste resource recovery facilities.

EPA is not excluding hazardous waste resource recovery facilities. It is deferring Subtitle C regulation of the actual use and reuse of hazardous waste and hazardous waste recycling and reclaimation activities until standards can be developed.

- o Owners of oil tankers are allowed to use their full equity to establish financial responsibility requirements for oil spills. Require the same for hazardous waste facilities. The 10 percent equity limitation is unsupported.
- o Allow financial test as evidence of financial responsibility.
- o Level of self-insurance should be left to the market place.
- o County of San Diego is self-funded and self-administrates its general public liability exposures. Consequently, the financial responsibility requirements are unrealistic for the County.

A financial test for "self-insurance" is currently reserved. These comments are being considered and will be discussed in detail when the self-insurance regulation is promulgated.

D. Regulatory Strategy

Issue: Are EPA's regulatory efforts misdirected?

Comments and Responses: A few commenters pointed out the following:

- o Large chemical plants pose far greater evironmental hazards than small waste disposal operations, and yet, are not required to carry insurance. EPA should resolve the inconsistency in requirements.

EPA does not disagree with the basic premise of the comment. Even though the waste disposal operation does pose environmental problems while a large chemical plant may pose a greater environmental hazard than a small waste disposal operation. However, the Congress, not EPA, has determined policy in this area. Through RCRA, Congress has chosen to deal with the problems posed by hazardous waste management operations. Under the RCRA mandate, therefore, EPA must seek to address financial responsibility requirements for hazardous waste disposal. It has done so and believes that this is a necessary part of the hazardous waste management program.

E. Use of Insurance as The Appropriate Regulatory Mechanism

Issue: Is insurance the appropriate regulatory mechanism to deal with the financial responsibility problem?

Comments and Responses: A few commenters stated the following:

- o A national indemnity fund for all waste facilities funded by a charge per unit of waste handled would be a better mechanism than insurance to deal with the financial responsibility problem.

Section II.C. discusses the reasons for EPA's disagreement with this comment. As far as possible, EPA prefers to allow the private sector to respond to the financial responsibility problem. If private sector efforts are unsuccessful, EPA may have to advocate federal intervention. The Agency presently does not have the statutory authority to set up a national indemnity fund. This would require major new legislation which would probably not be accomplished in the near term. For all these reasons, the Agency believes that private sector insurance is a superior alternative to a national indemnity fund.

F. Amount of Insurance

Issue: Is the amount of insurance required during interim and general status appropriate for all facilities?

Comments and Responses: Many comments were received on the appropriate amount of insurance that should be required. They are as follows:

- o Amounts are "arbitrary and capricious." No representative settlements exist at this level ($5 million per occurrence, $10 million annual aggregate) and occurrences of this magnitude should not occur from facilities in compliance with these regulations. The amounts should therefore be lowered.
- o Amounts should vary for facilities by the "degree and duration of risks" presented by facilities.
- o Amounts should be uniform because of the following reasons:
    - -- it is difficult to establish appropriate amounts on a case-by-case basis;
    - -- the amounts required are minimum amounts and some companies will get more;
    - -- insurance industry will adjust premiums so that they are consistent with the degree and duration of risks.

- $1 million and $2 million (annual aggregate) for coverage of sudden incidents for interim status facilities are too low and should be raised to $5 million and $10 million (annual aggregate).

In its proposed December 18, 1978 regulations, EPA required insurance in the amounts of $5 million per occurrence for sudden occurrences, exclusive of legal defense costs, and $5 million per occurrence (10 million annual aggregate) for non-sudden occurrences with no exclusion of legal defense costs, for permitted facilities. Subsequently, EPA proposed regulations on May 19, 1980 which required $1 million per occurrence (2 million annual aggregate) for sudden occurrences for interim status facilities.

As EPA pointed out at the time of the proposed regulations, selecting the appropriate amount of insurance is a very difficult task in the absence of actuarial data or experience with a regulated hazardous waste industry. A very large number of comments (summarized above) were received reflecting various commenters' satisfaction or dissatisfaction with the amounts of insurance required by the Agency. The Agency, therefore, felt that it would be desirable to undertake a thorough reinvestigation of this issue. In its subsequent analysis, the EPA considered a technical risk assessment analysis on which it could base its requirement of specific insurance amounts. This did not prove feasible, given the present state of knowledge of the technical aspects of hazardous waste management and the diversity of wastes, site characteristics, and waste management practices.1/ The Agency then attempted to improve its existing damage case data through intensive follow-up procedures. All states that had hazardous waste site regulations were contacted for any additional damage case data and their experience with selection of appropriate

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1/ See "Identification, Assessment, and Evaluation of Hazardous Waste Facility Siting Risks," Teknekron Research, Inc., July 1980.

The damage cases show that damages of up to $1 million are likely for most sudden incidents. Costs of damage in the two cases where they could be quantified were about $220,000. There were other cases where costs could not easily be quantified; the nature of the sudden problem, however, indicates that damage costs could conceivably mount to $1 million in some cases but are unlikely to exceed this amount by any significant margin.* In addition, conversations with some small facility owners indicate that if they could afford $1 million of insurance they would obtain that amount. Many of the states that require liability insurance for hazardous waste sitaes have set amounts that are consistent with $1 million for sudden incidents. Oregon requires $1 million for sudden incidents. Washington requires $1.2 million (it does not specify whether coverage is for sudden or non-sudden incidents). Oklahoma requires $100,000-500,000 and the exact amount must equal two times the value of all property within one mile of the site. Kansas requires $300,000 per occurrence. Finally, South Carolina is considering requirements of $1 million per occurrence. These states are dealing with a limited number of sites, and therefore, have been able to tailor the required insurance amounts to the operational characteristics of the sites.

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* The one sudden case where six deaths were reported due to explosions at the site is currently under litigation. Conversations with the lawyers of the injured parties indicated that compensation might be around $1-2 million for all parties in the aggregate. One party reportedly has settled for $220,000.

The estimated damages from non-sudden incidents to date have ranged from $11,700 - $3 million.* The damage costs incurred have averaged $539,000. The $3 million cost estimate of the incident at the Story Chemical Company site is suggestive of the maximum costs likely to be incurred from non-sudden accidents since it involved transporting fresh water to residents from a town situated at a considerable distance. The Agency recognizes that some non-sudden incidents may result in damages in excess of $3 million. EPA believes, however, that $3 million is an appropriate minimum level of liability coverage for all facilities. In addition, the insurance industry indicated that a smaller amount of insurance will improve the availability of insurance in that more insurers can write coverage at lower levels. State regulations were also examined for the amount of non-sudden coverage they require. Washington requires $1.2 million, Kansas requires $300,000 per occurrence and South Carolina requires $1 million per occurrence.

The analysis indicates that insurance amounts of $5 million per occurrence for sudden incidents and for non-sudden incidents each are inappropriate for all facilities. EPA agrees with the comment that insurance amounts should vary by the "degree and duration of risks" presented by facilities. Yet, as insurance industry officials and other commenters have stated, to set insurance amounts on a case-by-case basis would be an impossible administrative task.

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* Damages in the Love Canal case have exceeded $20 million. This case, however, is not included in this analysis because the damages at Love Canal occurred after the end of the operating life of the facility.

The Agency has given considerable thought to the problem and has devised an approach that will tailor the required insurance amounts to the risk charcteristics of facilities without requiring specification of different amounts for each and every facility.

EPA is reducing the required amount of insurance for interim status and permitted status facilities from $5 million per occurrence ($10 million annual aggregate) to $1 million per occurrence ($2 million annual aggregate) for sudden occurrences and to $3 million per occurence ($6 million annual aggregate) for non-sudden occurences. These amounts are exclusive of legal defense costs. They are set at levels, which, in the Agency's view, are appropriate minimum levels to cover the sudden and non-sudden incidents likely to occur at facilities. However, lower amounts (than those initially prescribed) are permissible if the risk characteristics of the facility do not warrant the prescribed amounts. Facility owners and operators requesting such variances must prove to the satisfaction of the Regional Administrator that a variance is warranted. Higher amounts are permissible if a facility wishes to carry higher coverage. Higher amounts may be required on a case-by-case basis, if in the view of the Regional Administrator the risk characteristics of the facility warrant a higher amount. Correspondingly, the Regional Administrator may require, on a case-by-case basis, storage or treatment facilities to carry non-sudden coverage.

As the damage case data indicates, coverage for sudden occurrences is appropriate for all facilities. Only surface impoundments, landfills, and land treatment facilities, however, are initially required to carry coverage for non-sudden occurrences. While sudden incidents (e.g., an explosion) can conceivably occur at any facility, non-sudden incidents are expected to occur most frequently at land disposal facilities. Most non-sudden incidents involve slow leaching of waste into groundwater which is unlikely to occur at above-ground storage or treatment facilities. Consequently, the Agency has decided to require all facilities to carry insurance coverage for sudden incidents but only land disposal facilities need initially carry coverage for non-sudden incidents.

Facilities in interim status are required to carry the same amount of coverage as permitted facilities. It is possible that damages from incidents at interim status facilities may exceed those from incidents at permitted facilities. With no data or experience, however, the Agency feels it is best to require uniform amounts for both sets of facilities. Later, as experience accumulates, EPA may adjust amounts accordingly. Similarly, inflation may necessitate adjustment of insurance amounts.

The amounts required do not vary by facility because the insurance industry has indicated that premiums charged will reflect quite accurately the risk potential at each facility. Besides, the required amounts are minimum amounts. Many facilities that have a high risk exposure may choose to get greater amounts of insurance. It is possible that some facilities that should secure higher insurance amounts may not do so voluntarily. In such cases, the Regional Administrator may revise upwards the amount of insurance required for these sites and may require storage or treatment facilities to obtain non-sudden coverage. Some of the factors that the Regional Administrator may consider, on a case-by-case basis, for the risk assessment at facilities are as follows:

- Proximity to groundwater.
- Geological structure underlying the facility.
- Proximity to population centers.

- Degree of risk associated with the type of product handled.
- Degree of risk management and loss control practiced at the facility.
- Number of facilities covered by one insurance policy.

The amounts required vary by the type of occurence. The damage case data as well as the nature of sudden and non-sudden occurences indicate that higher amounts are necessary for non-sudden occurences relative to sudden occurences.

For all of the reasons discussed above, the Agency is convinced that, through its approach, it has been able to tailor the required amount of insurance to the "degree and duration of risks" presented by facilities without actually undertaking the near impossible administrative task of specifying different amounts for each and every facility. In particular, the Agency believes the level and types of coverage required will allow the implementation of these liability requirements with a minimum of interpretation and adjustment for individual facilities.

- The insurance coverage requirement should be on a per company basis and not on a per facility basis.

The Agency agrees with this comment for several reasons. Liability insurance is normally written on a per firm basis rather than a per facility basis because insurance companies generally provide coverage to all facilities owned or operated by a firm under a single policy.* The insurance industry provides coverage in this manner because through the use of an annual aggregate they are able to take into account the risk of multiple incidents occurring at a firm which owns one or more facilities. EPA has reviewed all 15 incidents of sudden damage in their files and has not discovered a single case of multiple incidents occurring at a hazardous waste management firm in a given year. The 75 incidents of non-sudden damage in the files also do not reveal any case of multiple incidents. Some firms have been involved in multiple incidents but these incidents have been spread over a number of years and the source of the problem has usually remained unchecked over the years. These cases cannot be classified as cases of multiple incidents occurring in a given year. The risk of multiple accidents occurring at a firm in a given year increases, though at a diminishing rate, with the number of facilities owned or operated by a firm. It appears that the number of facilities owned by a firm must be very large before the probability of two or more accidents at a firm becomes significant. Yet recent EPA studies indicate that the most sites owned by a commercial waste management firm is 10. The hazardous waste management industry profile is shown in Table II. Further, the maximum number of on-site hazardous waste facilities, based on a review of the number of sites owned by DuPont and its own estimate of this number, would appear to be somewhere between 20 and 40. Consequently, the Agency believes that an annual aggregate per firm twice that of the liability limit per occurrence should provide adequate coverage for sudden and non-sudden incidents.

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* Conversations with insurance industry officials.

- Insurance coverage should be inclusive of legal defense costs.

EPA disagrees with this comment. It is true that excluding legal defense costs from the liability limits may raise the uncertainty facing the insurance companies as to their financial exposure in such coverage. The costs of legal defense, however, could be considerable and, if included in the limits, could consume the major portion of insurance coverage and leave little coverage for actual damages. The exclusion of legal defense costs is also consistent with standard Comprehensive General Liability policies. Many insurance industry officials contacted by EPA also indicated their preference

- An annual aggregate limit should be placed on the required insurance coverage for sudden and accidental occurrences.

EPA agrees that there is a need for such an annual aggregate because an aggregate limits the exposure that insurance companies face in any given year and thereby increases the willingness of insurance companies to provide coverage. At the same time, as was explained above, such a limit does not reduce significantly the degree of protection available to the public. Consequently, an annual aggregate limit has been placed on the required insurance coverage for sudden occurrences.

G. Availability of Insurance

Issue: Is insurance of the required type available during both interim status and permitted status to all facilities?

Comments and Responses: Some commenters stated that:

- Sudden coverage would be available to all facilities.

The Agency agrees with this comment. In the preamble accompanying the proposed regulations, EPA had stated that sudden coverage would be available to all facilities. Since then the Agency has obtained additional information which supports its earlier position. Insurance industry officials, insurance brokers, and others familiar with the situation indicated that liability insurance coverage for suddent events is generally available as part of the Comprehensive General Liability (CGL) policy carried by almost all companies.* The majority of large firms dealing with hazardous waste for exclusion of legal defense costs. Some of them mentioned that this approach has also been followed in the case of products liability insurance. Excluding defense costs, it was stated, would keep policies consistent with other types of insurance on the market and thus make them easier for insurance agents to understand.*

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* ICF Incorporated, "Availability and Cost of Third-Party Liability Insurance for Permitted Hazardous Waste Disposal Sites," February 20, 1980.

One commenter suggested that in cases where companies had existing coverage inclusive of legal defense costs EPA allow them to retain the inclusion but require them to double the liability limits. At the present time EPA finds it rather difficult to assess the magnitude of potential legal defense costs. To simply double the liability limits to account for defense costs could introduce a significant measure of uncertainty in the regulation. EPA believes that the correct procedure is to require insurance exclusive of defense costs.

EPA's initial proposal for non-sudden coverage of $5 million per occurence did not specify that this coverage must exclude legal defense costs. As stated above, defense costs could consume a significant portion of the limits of liability unless specifically excluded from these limits. Hence, while EPA is moving to a lower level of required non-sudden coverage in these final regulations, because this level of coverage is exclusive of legal defense costs, there is greater certainty that there will be funds available to compensate third parties.

- o An annual aggregate limit should be placed on the required insurance coverage for sudden and accidental occurrences.

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* Conversations with representatives of American Insurance Association, Alliance of American Insurers and Comments from Liberty Mutual and Alexander and Alexander.

Coverage for non-sudden incidents could be made available from foreign as well as domestic insurance companies. EPA believes that sufficient domestic capacity exists in the insurance industry to make provision of such coverage feasible. EPA estimates that the number of firms that would require insurance would vary from 5,000 to 15,000. The total amount of premiums required to provide coverage to all these facilities would be well within the range of the industry's capacity.* The critical issue is whether the industry will be willing to provide this coverage.

Currently, seven companies (domestic and foreign) offer or are currently in the process of offering coverage for non-sudden events. The companies are Travelers, Howden Agencies, Kemper Group, Alexander & Alexander, Shand Morihan, American International Group, and American Home Assurance Company. Many other insurance companies are presently undecided about providing coverage for non-sudden events. Some companies have indicated that they would provide coverage but would proceed with caution. A few companies have felt that they would not be able to provide any coverage. The consensus, however, appears to be that more and more companies are likely to provide coverage as time passes. The Agency's efforts to acquaint insurance companies and other interested parties with the requirements of the regulation are likely to speed up the entry process of insurance companies into the market for non-sudden coverage. This should further ensure that firms will be able to obtain the necessary coverage.

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* Background document for the regulations proposed on May 19, 1980.

The specifics of the coverage varies by the offeror. Insurance industry officials have indicated that no one policy is clearly superior to another. The Agency believes that it is not crucial to specify all the policy details that will be acceptable to the Agency. EPA intends to accept policies providing coverage for non-sudden incidents as long as they include provisions set out in the regulation (e.g., coverage should be exclusive of legal defense costs). This decision will considerably ease the availability situation without deferring from the primary objective of providing protection to injured parties.

It is possible that some small facilities and some facilities in interim status will not be able to secure coverage for non-sudden incidents. EPA does not feel, however, that this is a sufficient reason to exclude these facilities from the insurance requirements. Small facilities as well as interim status facilities present considerable risk of an accident. Exclusion of small facilities could provide an incentive for large facilities to be sub-divided into smaller facilities. Exclusion of interim status facilities would provide an incentive for facilities with intentions to phase out their facilities prior to permitted status to indulge in negligent practices during interim status. This would leave an important gap in the degree of protection available to the public. In addition, requiring these facilities to obtain sudden insurance coverage but not non-sudden insurance coverage would provide an incentive for insurance companies to attempt to classify accidents as non-sudden to avoid payments. EPA does not wish to set up such perverse incentives.

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coverage feasible. EPA estimates that the number of firms that would require insurance would vary from 5,000 to 15,000. The total amount of premiums required to provide coverage to all these facilities would be well within the range of the industry's capacity.[1/] The critical issue, therefore, is whether the industry will be willing to provide this coverage.

Currently, five companies (domestic and foreign) offer or are currently in the process of offering coverage for non-sudden events. The companies are Travelers, Howden Agencies, Kemper Group, Shand Morahan, and the American International Group. Many other insurance companies are presently undecided about providing coverage for non-sudden events. Some companies have indicated that they would provide coverage but would proceed with caution. A few companies have felt that they would not be able to provide any coverage. The consensus, however, appears to be that more and more companies are likely to provide coverage as time passes. The Agency's efforts to acquaint insurance companies and other interested parties with the requirements of the regulation are likely to speed up the entry process of insurance companies into the market for non-sudden coverage. This should further ensure that firms will be able to obtain the necessary coverage.

The specifics of the coverage varies by the offeror. Insurance industry officials have indicated that no one policy is clearly superior to another. The Agency believes that at this point it is not possible to specify all the policy details that will be acceptable to the Agency. The insurance market is in the early stages of developing policies to cover non-sudden occurrences, and EPA does not want to prematurely define the scope of these policies. EPA intends to accept policies providing coverage for non-sudden incidents as long

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[1/] Background document for the regulations proposed on May 19, 1980.

as they include provisions set out in the regulation (e.g., coverage should be exclusive of legal defense costs). This decision will considerably ease the availability situation without deviating from the primary objective of providing protection to injured parties. In addition, EPA intends to carefully monitor the market and may specify policy requirements if it finds that current policies carry exclusions that significantly lower the extent of protection available to the public. The Agency is also seeking additional public comments on this issue.

It is possible that some small facilities and some facilities in interim status will not be able to secure coverage for non-sudden incidents. EPA does not feel, however, that this is a sufficient reason to exclude these facilities from the insurance requirements. Small facilities as well as interim status facilities present considerable risk of an accident. Exclusion of small facilities could provide an incentive for large facilities to be subdivided into smaller facilities. Exclusion of interim status facilities would provide an incentive for facilities with intentions to phase out their facilities prior to permitted status to indulge in negligent practices during interim status. This would leave an important gap in the degree of protection available to the public. In addition, requiring these facilities to obtain sudden insurance coverage but not non-sudden insurance coverage would provide an incentive for insurance companies to attempt to classify accidents as non-sudden to avoid payments. EPA does not wish to set up such perverse incentives.

There is an added advantage in requiring interim status facilities to obtain non-sudden coverage. Insurance companies provide non-sudden coverage after an engineering inspection of the facility and an upgrade of the facility

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should it prove unsatisfactory to the insurance company with regard to engineering specifications. Consequently, with the non-sudden coverage requirement during interim status, the public will benefit from the insurance industry's oversight of facilities. This insurance industry oversight will not replace the Agency's efforts at oversight; it will simply supplement EPA's resources in their oversight efforts.

For all these reasons, EPA is requiring small facilities and interim status facilities to obtain non-sudden insurance coverage. At the same time, EPA is taking many step to ensure insurance availability. The Agency is considering a self-insurance regulation which may allow many firms to demonstrate their financial strength as evidence of financial responsibility in lieu of liability insurance. In addition, EPA is initially requiring only land disposal facilities to obtain non-sudden coverage because these are the facilities most likely to encounter a non-sudden incident. Both of these provisions, by limiting the number of companies seeking insurance, will considerably aid the availability situation.

EPA's concern with the availability problem has also prompted it to phase the non-sudden coverage requirement. The other options considered by EPA were either to require all firms to obtain coverage soon after promulgation or give all firms three years from the promulgation date to obtain the requisite coverage. Given various commenter's and insurance industry's concern regarding the availability of insurance to small firms, and the necessity for firms to carry coverage as soon as feasible, EPA is requiring firms to obtain coverage in three equal batches. Large firms are required to obtain non-sudden insurance coverage within six months from the effective date of the regulations (i.e., fully one year from the date of promulgation). Medium-sized firms will have a corresponding eighteen months (i.e., two years from the promulgation date) and small firms will have a corresponding thirty months (i.e., three years from the promulgation date) to obtain coverage.

Firm sales will be used as a proxy for size and the sales figures used to group the firms are as follows: firms with annual sales of less than $5 million classify as small and firms with annual sales exceeding $10 million classify as large, with medium-sized firms falling in between the two amounts. This classification scheme was developed as follows.

The total number of manufacturing firms from industries that commonly generate hazardous waste were ranked in terms of sales. Firms with annual sales of less than $3 million were excluded since these firms would, in all probability, go off-site for their waste disposal.[1/] The remaining firms were divided into three equal sets to provide the following sales figures.

TABLE 2

Case	No. of Firms	Annual Sales
I	Bottom One-Third	Less than $4.5 million
	Top One-Third	$9.2 million or more
II	Bottom One-Third	Less than $4.5 million
	Top One-Third	$9.3 million or more

Case I: Includes firms from SIC codes 22 to 40.
Case II: Includes firms from SIC codes within codes 22 to 40 that generate in excess of 1 percent of all waste generated by firms in all manufacturing industries.

SOURCE: EPA analysis of data provided by Dun and Bradstreet.

[1/] This conclusion was reached in the following manner. The economic impact analysis for RCRA regulations was examined which showed the costs of compliance with RCRA regulations for industries of varying sizes as a percent of their sales. The analysis yielded an industry-average for the minimum sized facility that would find it economic to maintain on-site disposal facilities. The minimum size proved to be approximately $3 million in annual sales.

Thus, $5 million and $10 million in annual sales are used to divide the firms into three equal sized sets.

During the three years it will take all firms to obtain non-sudden coverage, and subsequently, EPA intends to monitor the development of the insurance market. If it appears that the private insurance community is unwilling or unable to provide the required coverage, the Agency may attempt to encourage market development. The following possibilities are currently under consideration:

- o Evaluation and encouragement of alternative delivery systems, market assistance plans, and other mechanisms.
- o Encouragement of individual state research and innovation in assuring markets.
- o Adoption of back-up federal mechanisms (see below).

EPA was concerned, as were some commenters, that coverage available now could get cancelled in the future in the face of substantial adverse experience with hazardous waste incidents. Some insurance companies have indicated that they may not provide coverage in the future if they face extraordinary losses. However, EPA believes that as a result of its regulations, the number of incidents requiring compensation should not be large, so extraordinary losses should not occur. For example, the worst incident in the past were often caused by the long term leaching of wastes into groundwater. EPA's groundwater monitoring requirements will hopefully ensure that such situations are detected earlier than in the past, so that damage can be prevented. Finally, many insurance companies have indicated that they would, in all likelihood, continue to provide coverage once they enter the market. In the unlikely event that a substantial number of insurance companies withdraw coverage in the future, EPA may proceed with certain "back-up" options that it is currently considering. These may include:

- Direct provision of insurance to hazardous waste facilities.
- Provision of reinsurance to the primary insurer.
- Guaranteed low interest loans to insurers, or, to reinsurers that suffer surplus depletion from hazardous waste events insured at conditions and in response to EPA's regulatory scheme.

Consequently, EPA is convinced that it need not drop the insurance requirement despite the concern that insurance coverage would be withdrawn in the future.

- Insurance coverage would not be available for non-accidental injury and claims.

Insurance policies typically contain exclusions and definitions which prescribe the conditions and scope of liability coverage provided by the policy. Terms such as "accidental" have generally accepted meanings within the insurance industry, but the applicability of the term to a given occurrence may be the subject of dispute between injured parties and the insurance company defending a policy against claims. EPA intends to monitor the insurance market and see if this definition, and others, will significantly detract from the protection available to the public. If so, EPA will then consider specifying policy details acceptable to the Agency. Consequently, EPA regulations remain unchanged as a result of this comment.

- Insurance coverage would be void if the policy holder was in violation either of some policy condition or of EPA statutes.

As stated above, insurance policies typically contain exclusions which prescribe the conditions and scope of coverage. It is not clear to what extent, if at all, these exclusions will work against the goal of EPA's

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liability requirements, which is to ensure that funds will be available from which third parties can seek compensation for injuries or damages resulting from the operations of hazardous waste management facilities. EPA intends to monitor the insurance market and if certain exclusions do in fact detract from the protection to the public provided by the liability requirement, EPA will consider limiting the exclusions in policies used to comply with the Agency's liability requirements. At this time, however, EPA sees no need to alter its financial responsibility regulations.

- Insurance coverage would not be available until the hazardous waste site is active. In some cases their funds would have to be spent without any assurance that the financial responsibility requirements would be met and an operating permit granted.

EPA disagrees with this comment. The potential insurers can be provided with complete information as to the nature and method of future operations of the facility, the surrounding area, and whatever other information is required of the insured. EPA has been informed by insurers that they would give a tentative commitment to provide coverage if all aspects of the waste site meet their approval.[1/] Consequently, EPA does not intend to change the regulation as a result of this comment.

H. Cost and Affordability of Insurance

Issue: Are insurance costs reasonable? Will all facilities be able to afford these costs?

Comments and Responses:

- Insurance costs are unwarranted and should therefore be considered unreasonable.

EPA disagrees with this comment. In section II.B. the Agency discussed the need for financial responsibility regulations and concluded that liability

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[1/] Conversation with insurance industry officials.

requirements are an integral and necessary part of its program to protect human health and the environment. The Agency showed (Section IV.D.) that under the circumstances insurance is the appropriate regulatory mechanism. Consequently, EPA does not believe that insurance costs are unwarranted.

- o Small operators will not be able to fully pass on insurance costs due to competition from large operators who can spread these costs over greater volumes. Many small operators will not be able to afford to absorb the costs of insurance, will consequently go bankrupt, thus greatly reducing the nation's disposal capacity.

EPA has extensively analyzed the cost issue. Since only a few insurance companies currently offer the required coverage, estimates of cost must, of necessity, be based on the few data points available. EPA attempted to contact many insurance companies in an effort to obtain more cost information. Many of the companies, however, were reticent about committing themselves to certain cost numbers. They did emphasize, however, that costs would be commensurate with the degree and duration of risks presented by facilities.[1/] Costs are likely to go down in the future as experience with the coverage accumulates; costs could go up in the face of unfavorable experience.

The cost of a CGL policy (inclusive of sudden coverage) could range from less than 1 percent to 10 percent of a firm's revenues depending upon its risk characteristics. Costs of non-sudden coverage are more uncertain. It is estimated, however, that these costs would range from 1 to 5 percent for "average" risk facilities but could be considerably higher for "high" risk facilities.[2/]

[1/] Conversations with insurance industry officials.

[2/] ICF Incorporated, Availability and Cost of Third-Party Liability Insurance for Permitted Hazardous Waste Disposal Sites, February 20.

Even though costs of coverage are related to risk characteristics of facilities and not their size, the cost per unit volume will necessarily be higher for small volume facilities than for large volume facilities. EPA, therefore, feels that there may be some firms who are not able to fully absorb insurance costs and, as a result, may face insolvency or economic unviability. EPA does not want to preclude owners or operators from owning or operating a facility by requiring a level of insurance that may not be commensurate with the risk presented by these facilities. EPA's authority to promulgate "necessary or desirable" standards under Section 3004(b) is qualified by the last paragraph of Section 3004:

> "No private entity shall be precluded by reason of criteria established under paragraph (b) from the onwership or operation of facilities providing hazardous waste treatment, storage, or disposal services where such entity can provide assurances of financial responsibility and continuity of operation consistent with the degree and duration of risks associated with the treatment, storage, or disposal of specified hazardous waste."

Consequently, facilities that may face insolvency or economic unviability due to insurance costs that are not commensurate with the risk characteristics of their facilities may request variances in the form of an adjusted level of required coverage. EPA expects, however, that very few facilities will be able to justify a level of coverage less than that required by these regulations. This burden of such demonstrations will lie with the owner or operator seeking the variance.

I. Other Issues

- Do not specify the size of deductible; this should be left to the insurer and the insured.
- Allow companies to use financial test to show their ability to carry deductibles in excess of 5 percent.
- Allow flexible deductible but make it binding on the insurance companies to pay "first dollar."

In its proposed regulations, EPA specified a deductible ceiling in order to ensure that companies would not carry a larger deductible than would be commensurate with their financial strength. Yet, EPA wanted to allow a deductible since it is a commonly used device to reduce insurance costs and to ensure better loss control. Even though the 5 percent deductible might be adequate for most facilities, EPA realizes that it might be cost-effective for some firms to carry higher deductibles without detracting from their ability to meet their financial obligations for third party liability.

EPA considered allowing companies to use a financial test to show their ability to carry deductibles in excess of 5 percent. This would allow many large firms to carry more appropriate deductibles. This suggestion has an important defect. The use of a financial test to approve a particular deductible size places on EPA the burden of reviewing the financial strength of each company. The Agency prefers to leave this case-by-case review to the insurance companies.

EPA believes that the most workable approach is to allow a flexible deductible but require the insurance companies to honor the deductible payments and then, in turn, collect the necessary funds from the insured. Through this mechanism, the insured will have complete flexibility to select

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the most cost-effective policy and the insurance industry will have an incentive to counteract any tendency of the insured to carry a deductible that is too large. Consequently, the Agency is requiring that each policy be amended by attachment of a Hazardous Waste FAcility Liability Endorsement certificate of insurance (EPA Form 8700-22) which will hold the insurer liable for first dollar payments, but allow the insurer and the insured the flexibility to settle on an appropriate deductible between themselves. This approach parallels that used by the Interstate Commerce Commission for motor carrier liability.[1]

- Do not restrict the choice of insurers to ones "licensed or eligible to insure."

EPA feels that it would be self-defeating not to ensure the financial strength of the insurers in a regulation so heavily dependent on the insurer's ability to meet claims. The standard lines insurance companies are licensed by the states in which they are domiciled. These companies normally provide a broad market for the traditional risks and constitute the majority of the insurance industry. The states have different licensing procedures but they all scrutinize in varying detail the financial strength of these companies. In addition, every state (but one) has a fund that is used to meet the obligations of a licensed company that may go bankrupt.[2]

1/ See Interstate Commerce Commission, Form B.M.C. 90, Endorsement for Motor Carrier Policies of Insurance for Automobile Bodily Injury and Property Damage Liability Under Section 215 of the Interstate Commerce Act.

2/ Conversation with an official from the National Association of Insurance Commissioners.

Surplus lines companies, though regulated, are unlicensed companies.[1] The degree of regulation differs markedly between states and is minimal in some.[2] Many states were contacted in order to get information on past insolvencies of surplus lines companies. State officials indicated that some surplus lines companies had become insolvent but they were unable to provide specific figures.

Captive insurance companies, if domiciled in the U.S., are licensed.[3] However, such companies set up offshore are not subject to U.S. jurisdiction or regulations. EPA, therefore, has no way of assessing the financial strength of offshore insurers.

EPA has carefully weighed the benefits of restricting acceptable insurers to the standard lines carriers, but is convinced that to do so would markedly restrict the market and, in many cases, may make insurance unavailable. The Agency, therefore is not currently placing any restrictions on the choice of insurers. It will, however, monitor the insurance markets and restrict the choice of insurers if subsequently it seems desirable.

- o Claims-made policies could be cancelled by the insurer before third parties have time to submit claims; therefore, EPA should only permit occurrence-based policies.

EPA agrees that the cancellation provisions in claims-made policies are a cause for concern. Damages to persons and property for non-sudden accidents could manifest themselves slowly and over many years, as a result, insurers

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[1] Surplus lines companies cover risks for which there is no market available through the standard lines companies.

[2] Conversation with officials from state insurance departments.

[3] Captive insurance companies are wholly owned by a non-insurance organization and their primary purpose is to insure or reinsure the risks of the parent organization and its subsidiaries.

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could cancel coverage of damage incidents before claims are ever filed. On the other hand, EPA believes that claims-made policies will represent a substantial part of the market for non-sudden coverage, especially in the early years of the program. EPA believes that by restricting acceptable policies to the occurrence-based forms, it would greatly limit the availability of coverage for non-sudden accidents and hence jeopardize the success of the liability requirement.

EPA's solution to the cancellation problem is to provide a period of 120 days after a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to the air, soil, or surface water, during which a claims-made policy cannot be cancelled. EPA believes this approach will give third parties a reasonable opportunity to file claims, but not erode unreasonably the basic form of the claims-made policy, which depends on limiting the exposure of an insurance company to claims filed during a specified interval of time.

o Allow use of state requirements in lieu of federal requirements.

The Agency agrees with this comment where equivalency of requirements can be shown. There would be no problem in states that receive authorization to operate a hazardous waste regulatory program in lieu of the federal program, since only the state's requirements would apply. Some states, however, may not seek or obtain federal authorization, and, for others, authorization may be delayed. In such states the owners and operators would be subject to federal hazardous waste regulations and also to any state hazardous waste regulations that are in effect. To avoid causing unnecessary burdens on owners and operators, the Agency has included provisions in the revised proposal that would allow owners or operators to use state-authorized mechanisms to meet the federal financial requirements if such mechanisms provide assurances that are substantially equivalent to that of mechanisms specified in the federal requirements during interim status and equivalent mechanisms during general status.

- Allow parent companies to assume financial responsibility for subsidiaries.

EPA is currently considering self-insurance provisions, and will address this comment in that connection.

- Do not require separate liability coverage if coverage in overall insurance program is adequate.

The Agency is not clear how to interpret "adequate." If the overall insurance program includes liability coverage for sudden and non-sudden occurrences from hazardous waste management operations and the limits of that coverage are equal, in the aggregate, to the amounts specified in the regulation, then the policy would meet the requirements of the regulation. In its absence, the Agency requires evidence of separate liability coverage. There appears to be no reason to make an exception and the Agency will make none.

- Allow "blanket" insurance coverage for all of a firm's operations--hazardous waste management as well as other operations. In such cases, increase minimum liability limits to prevent depletion of coverage from incidents not related to hazardous waste.

The Agency will accept "blanket" coverage only if a portion of that coverage (in the amounts prescribed) is targeted specifically toward hazardous waste occurences. As the commenter has recognized, an occurence unrelated to hazardous waste can leave little funds to cover damages from a hazardous waste occurence. If EPA were to set higher insurance amounts for "blanket" coverage to ensure sufficient funds for hazardous waste occurences, it would have to analyze the potential for damages from all other types of occurences. This would burden the Agency with analysis not required for these regulations. A far better solution, the Agency feels, is to allow "blanket" policies but insist on the prescribed amounts within the policy being targeted solely towards hazardous waste occurences.